SOLICITATION NO. 01-B-0001

OPERATION AND MAINTENANCE

MISSISSIPPI RIVER

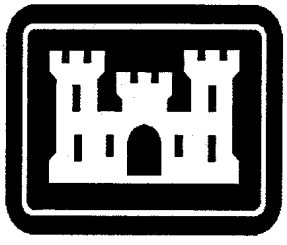
LOCKS AND DAMS NOS. 5, 5A, 6, 7, & 10

IOWA, MINNESOTA, AND WISCONSIN

CONSTRUCTION PROJECT DOCUMENTS FOR

DAM CRANE INSTALLATION (PHASE F)

JANUARY 2001



US Army Corps of Engineers

St. Paul District

CONSTRUCTION PROJECT DOCUMENTS

OPERATION AND MAINTENANCE, MISSISSIPPI RIVER
LOCKS AND DAMS NOS. 5, 5A, 6, 7, & 10; IOWA, MINNESOTA, AND WISCONSIN

DAM CRANE INSTALLATION (PHASE F)

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SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. DACW37-01-B-0001	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATE *(RFP)*	3. DATE ISSUED 16-Jan-2001	PAGE OF PAGES 1 OF

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W81G67-0285-3255	6. PROJECT NO. Dam Crane Installation

7. ISSUED BY CODE DACW37	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
CONTRACTING DIVISION USACE - ST PAUL 190 5TH STREET ST PAUL, MN 55101-1638	**See Item 7**

9. FOR INFORMATION CALL:	A. NAME DEBRA J PETERSON	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)* 651-290-5408

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

DACW37-01-B-0001

DAM CRANE INSTALLATION (PHASE F), LOCKS AND DAMS 5, 7, and 10.

Work consists of, but is not limited to the following: (1) Disassemble and remove the existing boom crane unit, electric locomotove type crane undercarriage, bulkhead hoistcar and miscellaneous items from elevated railway on dam service bridge structure; (2) Salvage and store on site (for reinstallation under this contract) the removed existing boom crane; (3) Dispose of the disassembled existing electric locomotove type crane undercarriage units and bulkhead hoistcar to contractor selected off-site disposal areas; (4) Transport new Government furnished (GF) items from storage near Fountain City, Wisconsin, to respective work sites. (Government to load the GF crane undercarriage units onto contractor's land plant or floating plant equipment; (5) Inspect existing crane superstructure and new GF items; (6) Hoist new GF crane undercarriage components, new GF bulkhead pickup beam components and existing salvaged crane superstructure (including lattice boom and counterweights) onto the existing elevated railway on the dam service bridge structure and assemble same; (7) Perform electrical work on/for the assembled crane/undercarriage; (8) Perform miscellaneous modifications to existing dam service bridge structure; (9) perform modifications to existing dam service bridge electrical service; (10) Furnish and install new Contractor fabricated items, install new bulkhead lift tabs onto existing dam bulkheads (L/D 5 only); (11) Assemble new pickup beams and inspect and test the assembled crane/ undercarriage.

THIS PROCUREMENT IS ISSUED SET ASIDE FOR SMALL BUSINESS CONCERNS. The North American Industrial Classifications Systems Code (NAICS) is 23499; the Small Business Size Standard is $27,500,000. The estimated magnitude of construction in terms of physical characteristics and price range is between $500,000 to $1,000,000.

11. The Contractor shall begin performance within 10 calendar days and complete it by 1 November 2001 after receiving

[ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* Section 00800 *.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [X] YES [ ] NO	12B. CALENDAR DAYS 10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8 by 14:00:00 *(hour)* local time 2/15/01 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [X] is, [ ] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE / FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

SEE SCHEDULE

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.	☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*	31A. NAME OF CONTRACTING OFFICER *(Type or print)*

30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

SECTION 00010 Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1.00	Lump Sum		
	Dam Crane Installation at Dam No. 5				
				_____.____	_____.____
ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1.00	Lump Sum		
	Dam Crane Installation at Dam No. 7				
				_____.____	_____.____
ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1.00	Lump Sum		
	Dam Crane Installation at Dam No. 10				
				_____.____	_____.____
ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		1.00	Lump Sum		
	Performance and Payment Bonds				
				_____.____	_____.____

TOTAL AMOUNT: $_____.____

SCHEDULE NOTES

1. Facsimile of bids/proposals and facsimile of modifications thereto, will not be accepted.

2. All Quantities are estimated except where unit is given as "JB" (JOB) or "LS" (LUMP SUM).

3. The apparent low bidder will be requested to provide the following information as soon as possible after bid opening:

   a. A Financial Statement, to include a balance sheet and income statement, and
   b. A Bank Certification of Financial Capability (line of credit).

This information will be treated as confidential. The financial statements should be not over 60 days old. If over 60 days old, a certification should be attached stating that the financial condition of the firm is substantially the same or, if not the same, the changes that have taken place.

4. All extensions of the unit prices shown will be subject to verification by the Government. In case of a discrepancy between the unit price and the extension, the unit price will govern.

5. The original bid/proposal and any modifications must be complete as to all the items on the schedule. Award will be made to that bidder whose bid is most advantageous to the Government, based on price and the price related factors included in the solicitation.

6. Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing in accordance with Section 00100, Contract Clause "Explanation To Prospective Bidders", NOT LATER THAN 10 DAYS PRIOR TO BID OPENING. Questions can be faxed to (651)290-5706, attention to Debbie Peterson.

7. Bidders attention is called to Section 00700, Clause 252.204-7004 "Required Central Contractor Registration".

8. Due to the value of the Government-furnished property applicable to this procurement, bidders attention is called to the requirements set forth in Clause 52.228-5 “Insurance—Work on a Government Installation”, Clause 52.228-4002, “Insurance”, and Clause 52.250-4001 “Indemnification”.

9. Funding for this contract is contingent upon the conditions stated in Section 00800, Clause No. 52.232-5001, Continuing Contracts.

10. This solicitation is for Dam Crane Installations at Lock and Dam Nos. 5, 7, and 10. Work at Lock and Dam Nos. 5A and 6 is not a part of this contract. Any references found throughout this solicitation for work at Lock and Dam Nos. 5A and 6 are to be disregarded.

11. The addresses, phone numbers, and internet addresses (if available) for references cited in these specifications are listed in the Corps of Engineer Guide Specification (CEGS) 01090 SOURCES FOR REFERENCE PUBLICATIONS. CEGS 01090 is available on the TECHNIFO page of the Corps of Engineers Huntsville District internet site at: http://w2.hnd.usace.army.mil/.

SECTION 00100 Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

(1) Company name.

(2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at http://www.customerservice@dnb.com/. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

52.209-4001 BIDDER'S QUALIFICATIONS (APR 1984) FAR 9.105-1

Before a bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

52.214-1 SOLICITATION DEFINITIONS--SEALED BIDDING (JUL 1987)

"Government" means United States Government.

"Offer" means "bid" in sealed bidding.

"Solicitation" means an invitation for bids in sealed bidding.

(End of provision)

52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any

information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is “late” and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

52.214-12 PREPARATION OF BIDS (APR 1984)

(a) Bidders are expected to examine the drawings, specifications, Schedule, and all instructions. Failure to do so will be at the bidder's risk.

(b) Each bidder shall furnish the information required by the solicitation. The bidder shall sign the bid and print or type its name on the Schedule and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(c) For each item offered, bidders shall (1) show the unit price, including, unless otherwise specified, packaging, packing, and preservation and (2) enter the extended price for the quantity of each item offered in the "Amount" column of the Schedule. In case of discrepancy between a unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

(d) Bids for supplies or services other than those specified will not be considered unless authorized by the solicitation.

(e) Bidders must state a definite time for delivery of supplies or for performance of services, unless otherwise specified in the solicitation.

(f) Time, if stated as a number of days, will include Saturdays, Sundays, and holidays.

(End of provision)

52.214-18 PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

(1) Lump sum bidding;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.

52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

52.214-4001 INQUIRIES - BID INFORMATION

(a) Inquiries:

Any questions regarding this solicitation should be directed to Debbie Peterson, Contract Specialist, at telephone number (651) 290-5408 (collect calls not accepted). It is requested that all technical questions on the plans and specifications be submitted to the Contract Specialist by facsimile transmission to (651) 290-5706.

The Planholder's List and bid results can be found on the St. Paul District web site at http://www.mvp.usace.army.mil (click on "Contracts", then "Bid Solicitations").

(b) Bid Depository/Bid Opening Information:

Bids must be deposited prior to the date and time set for opening of bids. The bid depository is located in the Contracting Division, 6th Floor, of the St. Paul District, Corps of Engineers Centre, 190 Fifth Street East, St. Paul, Minnesota 55101-1638. A public bid opening will be held at the same location.

52.214-4002 ALL OR NONE QUALIFICATIONS (APR 1984) FAR 14.404-5

A bidder/offeror must quote on all items in this solicitation to be eligible for award. The Government will award on a "All or None" basis. Evaluation of bids/offers will be based, among other factors, upon the total price quoted for all items.

52.225-10 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT--CONSTRUCTION MATERIALS (FEB 2000)

(a) Definitions. Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Balance of Payments Program--Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act or Balance of Payments Program, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.232-38 SUBMISSION OF ELECTRONIC FUNDS TRANSFER INFORMATION WITH OFFER (MAY 1999)

The offeror shall provide, with its offer, the following information that is required to make payment by electronic funds transfer (EFT) under any contract that results from this solicitation. This submission satisfies the requirement to provide EFT information under paragraphs (b)(1) and (j) of the clause at 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration.

(1) The solicitation number (or other procurement identification number).

(2) The offeror's name and remittance address, as stated in the offer.

(3) The signature (manual or electronic, as appropriate), title, and telephone number of the offeror's official authorized to provide this information.

(4) The name, address, and 9-digit Routing Transit Number of the offeror's financial agent.

(5) The offeror's account number and the type of account (checking, savings, or lockbox).

(6) If applicable, the Fedwire Transfer System telegraphic abbreviation of the offeror's financial agent.

(7) If applicable, the offeror shall also provide the name, address, telegraphic abbreviation, and 9-digit Routing Transit Number of the correspondent financial institution receiving the wire transfer payment if the offeror's financial agent is not directly on-line to the Fedwire and, therefore, not the receiver of the wire transfer payment.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Department of the Army
St. Paul District, Corps of Engineers
190 Fifth Street East
St. Paul, Minnesota 55101-1638

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: Lock and Dam No. 5 – Lorne Hedin, Lockmaster
Address: Rt 1, Box 396, Minnesota City, MN 55959-9756
Telephone: (507) 689-2101

Name: Lock and Dam No. 7 – Theodore Engelin, Lockmaster
Address: Route 2, Box 51, LaCrescent, MN 55947-9502
Telephone: (507) 895-2170

Name: Lock and Dam No. 10 – Marv Althoff, Lockmaster
Address: PO Box 849, 5 Lock and Dam Lane, Guttenberg, IA 52052-0849
Telephone: (319) 252-1261

Government-Furnished Property:

Crane Undercarriage Units and Jib Hoists are located at the Fountain City Service Base, 431 North Shore Drive, PO Box 397, Fountain City, Wisconsin 54629-0397

Pickup Beams are located at Lock and Dam No. 5A Storage Building, W679 State Hwy 35, Fountain City,

Wisconsin 54629-7214

The point of contact for viewing the Government-furnished property is Sharonne Baylor, Winona Resident Office, at Phone (507) 454-6150.

52.236-4002 WORK PERFORMED BY THE CONTRACTOR

The successful bidder must furnish the Contracting Officer within 10 days after the award, the items of work which he will perform with his own forces, the percentage of the total work this represents, and the estimated cost thereof. (See Section 00700, clause entitled (“Limitations on Subcontracting").

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://www.arnet.gov/

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of"(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any FAR (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

SECTION 00600 Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contradictory to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as an agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (MAR 1996)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are [ ] are not [ ] presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have [ ] have not [ ], within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are [ ] are not [ ] presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has [ ] has not [ ], within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 2000) ALTERNATE I (OCT 2000) & ALTERNATE II (OCT 2000)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 23499.

(2) The small business size standard is $27.5 Million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) *Representations*. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.*] The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.*] The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) [*Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.*] The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) [*Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.*] The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) [*Complete only if offeror represented itself as a small business concern in paragraph (b)(1) of this provision.*] The offeror represents, as part of its offer, that—

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [*The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture*: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) [*Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.*] The offeror shall check the category in which its ownership falls:
_____ Black American.
_____ Hispanic American.
_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).
_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).
_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).
_____ Individual/concern, other than one of the preceding.

(c) *Definitions*. As used in this provision--
"Service-disabled veteran-owned small business concern"—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

"Veteran-owned small business concern" means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern—

(1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) *Notice*.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(3) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall—

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of Provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

_____

_____

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) [ ] It has, [ ] has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) [ ] It has, [ ] has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

[ ] (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

[ ] (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

[ ] (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

[ ] (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

[ ] (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclosure such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

SECTION 00700 Contract Clauses

CLAUSES INCORPORATED BY REFERENCE:

52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 1997
52.204-4	Printing/Copying Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-3	Convict Labor	AUG 1996
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis-Bacon and Related Act Regulations.	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	FEB 1999
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Affirmative Action For Disabled Veterans And Veterans of the Vietnam Era	APR 1998
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Disabled Veterans And Veterans Of The Vietnam Era	JAN 1999
52.223-5	Pollution Prevention and Right-to-Know Information	APR 1998
52.223-6	Drug Free Workplace	JAN 1997
52.223-14	Toxic Chemical Release Reporting	OCT 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.227-4	Patent Indemnity-Construction Contracts	APR 1984
52.228-11	Pledges Of Assets	FEB 1992
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.229-3	Federal, State And Local Taxes	JAN 1991
52.229-5	Taxes--Contracts Performed In U S Possessions Or Puerto Rico	APR 1984
52.232-17	Interest	JUN 1996
52.233-3	Protest After Award	AUG 1996
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984

52.236-8	Other Contracts	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.242-13	Bankruptcy	JUL 1995
52.247-34	F.O.B. Destination	NOV 1991
52.253-1	Computer Generated Forms	JAN 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	MAR 1999
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.205-7000	Provisions Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7000	Acquisition From Subcontractors Subject To On-Site Inspection Under The Intermediate Range Nuclear Forces (INF) Treaty	NOV 1995
252.209-7003	Compliance With Veterans' Employment Reporting Requirements	MAR 1998
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.247-7023	Transportation of Supplies by Sea	MAR 2000
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (OCT 1995) --ALTERNATE I (APR 1984)

(a) "Head of the agency" (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, including any deputy or assistant chief official of the agency; and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary.

(b) "Commercial component" means any component that is a commercial item.

(c) "Component" means any item supplied to the Federal Government as part of an end item or of another component.

(d) "Nondevelopmental item" means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (e)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (e)(1) or (e)(2) solely because the item is not yet in use.

(e) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

52.202-4001 DEFINITIONS (MAY 1995) EFARS Part 2.101

"Chief of Contracting Office" means the Chief of the Contracting Division at a District, or the Director of Contracting at a Division, Center, Laboratory, or other support activity.

"Command" means each USACE Division, each USACE District, The U.S. Army Engineering and Support Center (HNC), Transatlantic Programs Center (TAC), Transatlantic Programs Center (Europe) (TAE), Topographic Engineer Center (TEC), Cold Regions Research and Engineering Laboratory (CRREL), Construction Engineering Research Laboratory (CERL), Humphreys Engineering Center Support Activity (HECSA), and Waterways experiment Station (WES).

"Commander" means the commanding officer of each USACE district and each USACE division, and the director or commander of HNC, TAC, TAE, ETL, CRREL, CERL, HECSA and WES.

"Head of Contracting Activity (HCA)" for USACE means the Chief of Engineers.

Centers. For determining contracting authority levels for this regulation, Centers (HNC, and TAC) will equate to a Division. As a subordinate unit to TAC, TAE’s contracting authority will therefore equate to that of a district.

Level higher than the contracting officer. When a District or TAE chief of contracting is the contracting officer, a "level higher than the contracting officer" means the Division or Center Director of Contracting. When an operating Division, Center or Laboratory Director/Chief of Contracting is the contracting officer a "level higher than the contracting officer" means the PARC.

Local Cooperation Agreements (LCAs). See Project Cooperation Agreements.

Project Cooperation Agreements. Formerly referred to as Local Cooperation Agreements, these are agreements under 31 U.S.C. 6305 and 42 U.S.C. 1962d-5b. They are not contracts as defined by the FAR.

“USACE and HQUSACE" means the United States Army Corps of Engineers and its headquarters, respectively.

52.214-26 AUDIT AND RECORDS--SEALED BIDDING. (OCT 1997)

(a) As used in this clause, records includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the modification; or

(4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the data of this contract, is incorporated by reference in its entirety and made a part of this contract.

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts expected to exceed the threshold in FAR 15.403-4(a)(1) for submission of cost or pricing data.

52.214-27 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for the submission of cost or pricing data at FAR 15.403-4(a)(1), except that this clause does not apply to a modification if an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount because

(1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to

that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) above.

(c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which:

(1) the actual subcontract; or

(2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made:

(1) the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted;

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer;

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract; or

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2) Except as prohibited by subdivision (d)(2)(ii) of this clause:

(i) an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if:

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.

(ii) An offset shall not be allowed if:

(A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or (B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid:

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

52.214-28 SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall:

(1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.403-4(a)(1); and

(2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modifications involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in subsection 15.406-2 of the Federal Acquisition Regulation that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that, when entered into, exceeds the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1).

52.219-6 NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (JUL 1996)

(a) Definition.

"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

(b) General. (1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to a small business concern.

(c) Agreement. A small business concern submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States. The term "United States" includes its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed $25,000, a small business concern may furnish the product of any domestic firm. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--

(1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
Buffalo Cty, WI – 0.6% Winona Cty, MN – 0.6% LaCrosse Cty, WI – 0.9% Grant Cty, WI – 0.5% Clayton Cty, IA – 0.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the

goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Lock and Dam 5, Minnesota City, MN (Buffalo County, WI and Winona County, MN), Lock and Dam 7, LaCrescent, MN (Winona County, MN and LaCrosse County, WI), Lock and Dam 10, Guttenberg, IA (Grant County, WI and Clayton County, IA).

52.225-9 BUY AMERICAN ACT--BALANCE OF PAYMENTS PROGRAM—CONSTRUCTION MATERIALS (FEB 2000)

(a) Definitions. As used in this clause--

Component means any article, material, or supply incorporated directly into construction materials.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows: None

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act or Balance of Payments Program. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is noncompliant with the Buy American Act or Balance of Payments Program.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....
Item 2			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral,

attach summary.
Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(a) Definitions. As used in this clause:

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any ``Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutea not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1542(c).

"Interested party" means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street, NW., MS 2626-MIB, Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of a cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee prime contract.

(iii) The target cost and ceiling price of a fixed-price incentive prime contract.

(iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be twenty percent (20%) of the bid price or $3 Million, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is $100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

_____

(Name)

_____

(Title)

_____

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against
the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in section 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments. (1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date shall be the 14th day after the date of the Contractor's payment request, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor, whichever is later. If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(2)(i) through (a)(2)(ix) of this clause. If the invoice does not comply with these requirements, it shall be returned within 7 days after the date the designated billing office received the invoice, with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing any interest penalty owed the Contractor in the manner described in subparagraph (a)(4) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice date. (The Contractor is encouraged to date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., prompt payment discount terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to be notified in the event of a defective invoice.

(viii) For payments described in subdivision (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Any other information or documentation required by the contract.

(x) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.

(3) Interest penalty. An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.

(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority (e.g., tariffs). This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice principal payment amount approved by the Government until the payment date of such approved principal amount; and will be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice principal payment amount and will be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, the due date on the corrected invoice will be adjusted by subtracting from such date the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than $1 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) Prompt payment discounts. An interest penalty also shall be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) Additional interest penalty. (i) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with subdivision (a)(6)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor--

(A) Is owed an interest penalty of $1 or more;

(B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

(1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or

(2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty, except--

(1) The additional penalty shall not exceed $5,000;

(2) The additional penalty shall never be less than $25; and

(3) No additional penalty is owed if the amount of the underlying interest penalty is less than $1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(4)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(6)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. (1) Due dates for recurring financing payments. If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the [insert day as prescribed by Agency head; if not prescribed, insert 30th day] day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(3) Interest penalty not applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment

penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) A copy of any notice issued by a Contractor pursuant to subdivision (d)(3)(i) of this clause has been furnished to the Contracting Officer.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to subparagraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under subparagraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under subdivision (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under subparagraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under subdivision (e)(5)(i) of this clause.

(f) Third-party deficiency reports. (1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under subdivision (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under subdivision (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. A written notice of any withholding shall be issued to a subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient

subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (DEC 1998)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification

requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding $100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative disput resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding

to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

52.236-13 ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(f) Before commencing the work, the Contractor shall-

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved",

"acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) In the Government-furnished facilities, equipment, materials, services, or site; or

(4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

(1) the date, circumstances, and source of the order and

(2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (OCT 1998)

(a) Definitions.

"Commercial item", as used in this clause, has the meaning contained in the clause at 52.202-1, Definitions.

"Subcontract", as used in this clause, includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c) Notwithstanding any other clause of this contract, the Contractor is not required to include any FAR provision or clause, other than those listed below to the extent they are applicable and as may be required to establish the reasonableness of prices under Part 15, in a subcontract at any tier for commercial items or commercial components:

(1) 52.222-26, Equal Opportunity (E.O. 11246);

(2) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212(a));

(3) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793); and

(4) 52.247-64, Preference for Privately-Owned U.S.-Flagged Commercial Vessels (46 U.S.C. 1241)(flow down not required for subcontracts awarded beginning May 1, 1996).

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

52.245-1 PROPERTY RECORDS (APR 1984)

The Government shall maintain the Government's official property records in connection with Government property under this contract. The Government Property clause is hereby modified by deleting the requirement for the Contractor to maintain such records.

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000) - ALTERNATE I (APR 1984)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action. (1) The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer shall notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to

proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by (i) 45 percent for fixed-price contracts or (ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of $50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(h) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering--Construction clause of contract . . . . . , shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(j) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or $100,000, whichever is greater. The Contracting Officer will be the sole determiner of the amount of collateral savings.

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) - ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The

Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the

Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

52.250-4001 INDEMNIFICATION (MAY 2000)

(a) Notwithstanding any other provision of this contract:

the contractor shall indemnify and hold the Government harmless from any and all damage to persons or property that results from the contractor’s work under this contract.

the contractor shall be responsible for any and all damage to the property furnished by the Government for the performance of this contract unless the sole and exclusive cause of the damage is the fault or negligence of the Government.

the contractor shall be responsible for damage to any Government plant, facilities or real estate that results from the performance of the work under this contract.

the contractor shall reimburse the Government for the cost of repairing or replacing any Government property damaged by the contractor as a result of the performance of the work under this contract. The Government may, in its sole discretion, allow the contractor to repair or replace any damaged Government property in lieu of reimbursing the Government.

the contractor shall be responsible for any environmental damage that results from the performance of the work under this contract.

(b) For purposes of this clause, the term “contractor” includes, without limitation, the officers, agents, and employees of the contractor and all materialmen, suppliers, consultants, and subcontractors (at any tier).

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://www.arnet.gov/

52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any FAR (48 CFR 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at http://www.ccr2000.com.

(End of clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (AUG 2000)

(a) The Contractor agrees to deliver under this contract only such of the following articles that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico --

(1) Food;

(2) Clothing;

(3) Tents, tarpaulins, or covers;

(4) Cotton and other natural fiber products;

(5) Woven silk or woven silk blends;

(6) Spun silk yarn for cartridge cloth;

(7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics;

(8) Canvas products;

(9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles); or

(10) Any item of individual equipment (Federal supply Classification 8465) manufactured from or containing such fibers, yarns, fabrics, or materials.

(b) This clause does not apply --

(1) To supplies listed in FAR section 25.104(a), or other supplies for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To foods which have been manufactured or processed in the United States, its possessions, or Puerto Rico;

(3) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(4) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end item that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(a) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/ findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

SECTION 00800 Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

52.000-4004 PARTNERING

The Government proposes to form a partnering relationship with the contractor. This partnering relationship will strive to facilitate communication and draw on the strengths of each organization in an effort to achieve a quality project, within budget, and on schedule. Participation will be totally voluntary. Partnering will not alter or supersede any provision of this contract nor will it provide either party with any additional contractual rights or obligations. Participation in partnering will not affect award of this contract. Any cost associated with this partnering will be agreed to by both parties and will be shared equally, with no change in contract price.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) - ALTERNATE I (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 1 November 2001. The work at Lock and Dam No. 7 will start no earlier than 1 August 2001. The time stated for completion shall include final cleanup of the premises.

The completion date is based on the assumption that the successful offeror will receive the notice to proceed by 6 April 2001. The completion date will be extended by the number of calendar days after the above date that the Contractor receives the notice to proceed, except to the extent that the delay in issuance of the notice to proceed results from the failure of the Contractor to execute the contract and give the required performance and payment bonds within the time specified in the offer.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $490.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys.

(b) Weather conditions. Bidders should satisfy themselves before submitting bids as to hazards from weather conditions. Complete weather records and reports may be obtained from the local U.S. Weather Service.

(c) Transportation facilities. Before submitting a bid, bidders should obtain necessary data as to access of highway and railroad facilities. The unavailability of transportation facilities shall not become a basis for claims for damages or time for completion of work.

(d) N/A

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term

or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and

material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.212-4003 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989) ER 415-1-15

a. This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSES: DEFAULT (FIXED-PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORKDAYS BASED ON (5) DAY WORKWEEK.

GEOGRAPHIC LOCATION -- Lock and Dam No. 5, Minnesota City, MN
Lock and Dam No. 7, LaCrescent, MN
Lock and Dam No. 10, Guttenberg, IA

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days												
L/D 5	15	10	6	5	5	5	5	5	4	3	5	13
L/D 7	18	13	9	5	5	5	5	5	4	3	6	15
L/D 10	15	10	6	5	5	5	5	4	4	3	4	12

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the CONTRACT CLAUSES: DEFAULT (FIXED-PRICE CONSTRUCTION).

52.222-4005 DAVIS-BACON WAGE DETERMINATION - CONFLICTING SCHEDULES MINNESOTA AND WISCONSIN

Work under this contract will be performed in both Minnesota and Wisconsin. Wage determinations for both Minnesota and Wisconsin are included as attachments in Section 00830 of the specifications. Some work under this contract may require members of the contractor's work force to perform work in both states. The contractor shall segregate the work performed in each state and under each wage determination on its payrolls. In the event that it is impracticable to segregate an employee's work, or in the event of a conflict as to the place of performance of that work, the wage classification (and rate) resulting in the highest rate of pay/fringe benefits to that employee will apply.

52.222-4006 DAVIS-BACON WAGE DETERMINATION - CONFLICTING SCHEDULES IOWA AND WISCONSIN

Work under this contract will be performed in both Iowa and Wisconsin. Wage determinations for both Iowa and Wisconsin are included as attachments in Section 00830 of the specifications. Some work under this contract may require members of the contractor's work force to perform work in both states. The contractor shall segregate the work performed in each state and under each wage determination on its payrolls. In the event that it is impracticable to segregate an employee's work, or in the event of a conflict as to the place of performance of that work, the wage classification (and rate) resulting in the highest rate of pay/fringe benefits to that employee will apply.

52.228-4002 INSURANCE

As referenced in Contract Clause: INSURANCE--WORK ON A GOVERNMENT INSTALLATION, the following types and amounts of insurance are required under this contract.

Type	Amount
Worker's Compensation and Employer's Liability Insurance:	
Coverage A Worker's Compensation	Compliance with States of Minnesota, Wisconsin, and Iowa Worker's Compensation Law
Coverage B Employer's Liability	$ 100,000
General Liability Insurance:	
Bodily Injury	$2,000,000 per occurrence
Property Damage	$5,000,000
Excess Liability (Umbrella)	$2,000,000
Automobile Liability Insurance (Comprehensive Policy Form):	
Bodily Injury	$ 500,000 per person and $1,000,000 per occurrence

Property Damage $ 100,000 per occurrence

52.228-4022 REQUIREMENT FOR BID GUARANTEE (FAR 28.101-2)

Each bidder shall submit with its bid a Bid Bond (Standard Form 24) with good and sufficient surety or sureties acceptable to the Government or other security as provided in the clause BID GUARANTEE in the form of twenty percent (20%) of the bid price or $3,000,000 whichever is lesser. The bid bond penalty may be expressed in terms of a percentage of the bid price or may be expressed in dollars and cents.

52.229-4001 IOWA SALES AND USE TAX

a. In the event goods, wares, or merchandise with respect to which the Iowa sales or use tax has been paid by the Contractor, become an integral part of the project, the Contractor shall obtain appropriate forms from the Iowa State Tax Commission for recording the amount of purchases of such goods, wares, merchandise, and shall execute such forms and submit them to the Contracting Officer within 60 days after final settlement of the contract. The Contractor shall provide and report all data and information which may be necessary or required to enable the Contracting Officer to obtain all refunds from the Iowa Tax Commission to which the Federal Government may be entitled.

b. The Contractor shall insert a clause containing the substance of the foregoing Paragraph a. in every first-tier subcontract or purchase order, and shall require each first-tier subcontractor or vendor to include such a clause in any subcontract or purchase order which he places. The Contractor shall obtain completed forms from his subcontractors and suppliers for submission to the Contracting Officer before final settlement of the contract.

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE MAR 1995)—EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region IV. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-4004 INVOICE PROCEDURES

In accordance with CONTRACT CLAUSE titled "PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS", the contractor shall submit invoices as follows:

a. In order to qualify for a periodic payment, the Contractor must submit a proper invoice (request for payment) to the Contracting Officer's Representative (COR) and a determination must be made that supplies or services conform to the contract requirements. This determination will be made for the sole purpose of processing progress payments and will not constitute formal acceptance. The due date for making progress payments shall be as stated in the contract clause: PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS.

b. The submitted request for payment must be accompanied with documentation adequate to substantiate the amount requested. Substantiation shall be consistent will the clauses in the solicitation titled Quantity Surveys, Purchase Orders, Invoices, etc. satisfactory to the COR.

c. The Contractor must also include with the payment request a certification as described in the Clause "PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS".

d. Payment requests will be reviewed for propriety by the COR. Defective invoices will be returned to the Contractor for resolution with defects identified. Along with the returned invoice, the COR may include, at its option, an ENG FORM 93-PAYMENT ESTIMATE reflecting the substantiated and uncontested payment amount. The Contractor will then be given the option of signing and returning the FORM 93 for payment along with the original invoice and certification or resubmitting a revised invoice and certification. To expedite payment, the Contractor may request in writing that the COR retain the defective invoice and immediately process the payment request at the amount determined to be acceptable to the Government.

52.232-5001 CONTINUING CONTRACTS (MAR 1995)—EFARS

(a) This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U.S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations, and from future contribution to the project having one or more non-federal project sponsors. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract.

(b) The sum of $450,000.00 has been reserved for this contract and is available for payments to the contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds together with funds provided by one or more non-federal project sponsors will be reserved for this contract.

(c) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not entitle the contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (f) and (i) below. No such failure shall constitute a breach of this contract, except that this

provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefore.

(d) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The contracting officer will promptly notify the contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.

(e) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the contracting officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under the contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(f) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of the contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.

(g) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under the "Suspension of Work" clause or in any other manner under this contract.

(h) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(i) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the contracting officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.

(j) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

(End of clause)

52.236-4004 AVAILABILITY AND USE OF UTILITY SERVICES

The Government will make available to the Contractor, from existing outlets and supplies to the extent that they are available, all reasonably required amounts of electric power without charge. The Contractor, at his own expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and shall remove the same prior to final acceptance of the construction.

52.236-4014 PURCHASE ORDERS

Two legible copies of each purchase order issued by the Contractor or the Contractor's subcontractors for materials and equipment to be incorporated into the project, shall be furnished the Contracting Officer as soon as issued. Each purchase order shall (1) be clearly identified with applicable Department of Army contract number, (2) carry and identifying number, (3) be in sufficient detail to identify the material being purchased, and (4) indicate a definite delivery date. At the option of the Contractor, the copies of the purchase orders may or may not indicate the price of the articles purchased.

52.236-4025 FLOATING PLANT EQUIPMENT (MAY 1999)

When mechanized equipment is operated on floating plant, the contractor shall provide positive and acceptable means of preventing this equipment from moving or falling into the water. The type of equipment addressed by this clause includes front-end loaders, bulldozers, trucks (both on and off-road), backhoes, trackhoes, and similar equipment. If the Contractor plans to use such equipment on floating plant, an activity hazard analysis must be developed for this feature of work. The plan must include a detailed explanation of the type or types of physical barriers, curbs, structures, etc., which will be incorporated to protect the operator and prevent the equipment from entering the water. Nonstructural warning devices may be considered for situations where the use of structural barriers is determined to be impracticable. The activity hazard analysis must thoroughly address the procedure and be submitted to the Corps of engineers for review and acceptance prior to start of this feature of work.

52.236-4061 OBSTRUCTION OF CHANNEL

The Government will not undertake to keep the channel free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the Provisions of Section 7 of the River and Harbor Act approved August 8, 1917. The Contractor will be required to conduct the work in such manner as to obstruct navigation as little as possible. The Contractor shall consult with the appropriate Coast Guard office to determine whether a Notice to Mariners will need to be issued for construction-related activities that might interfere with navigation or be interfered with by such navigation. (Point of Contact: Marine Safety Detachment, St. Paul, Minnesota, 651-290-3991) If the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of vessels, said plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon the completion of the work the Contractor shall promptly remove his plant, including ranges, buoys, piles, and other marks placed by him under the contract whether in navigable waters or on shore.

52.236-4062 SIGNAL LIGHTS (JAN 1965)

The Contractor shall display signal lights and conduct his operations in accordance with the General Regulation of the Department of the Army and the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels or floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard instruction M16672.2B, navigation rules: International-Inland (COMDTINST) M16672.2B, or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR (Inland) as applicable.

52.236-4063 RADIO

The Contractor shall maintain a staff that is knowledgeable about radio communications to advise oncoming navigation of appropriate passing directions while the Contractor's floating plant is in the navigation

channel. In particular, the Contractor shall monitor Marine Band Channel 13 for commercial navigation and Channel 16 for emergency communication.

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title File Drawing No.

The contract drawings are listed on the sheet titled GENERAL DRAWING – INDEX OF CONSTRUCTION DRAWINGS included in the drawing set (M-LG-00/036). The reference drawings are listed on the sheet titled GENERAL DRAWINGS – INDEX OF REFERENCE DRAWINGS (SHEET 1 AND SHEET 2) included in the drawing set (M-LG-00/037 and M-LG-00/038). Work shall also conform to any drawings added by amendment or modification.

252.236-7002 OBSTRUCTION OF NAVIGABLE WATERWAYS. (DEC 1991)

(a) The Contractor shall --

(1) Promptly recover and remove any material, plant, machinery, or appliance which the contractor loses, dumps, throws overboard, sinks, or misplaces, and which, in the opinion of the Contracting Officer, may be dangerous to or obstruct navigation;

(2) Give immediate notice, with description and locations of any such obstructions, to the Contracting Officer; and

(3) When required by the Contracting Officer, mark or buoy such obstructions until the same are removed.

(b) The Contracting Officer may --

(1) Remove the obstructions by contract or otherwise should the Contractor refuse, neglect, or delay compliance with paragraph (a) of this clause; and

(2) Deduct the cost of removal from any monies due or to become due to the Contractor; or

(3) Recover the cost of removal under the Contractor's bond.

(c) The Contractor's liability for the removal of a vessel wrecked or sunk without fault or negligence is limited to that provided in sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 410 et. seq.).

52.239-4001 YEAR 2000 COMPLIANCE (FAR 39.106) (JUL 1998)

The contractor shall ensure that, with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically, the contractor shall perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Year 2000 compliance requirement.

52.245-4002 GOVERNMENT-FURNISHED PROPERTY IDENTIFICATION AND LOCATION

a) The Government will furnish to the Contractor the property listed below to be incorporated or installed into the work or used in performing the contract. The Contractor shall arrange for pickup of the Government furnished property by contacting Ms. Sharonne Baylor at Telephone No. (507) 454-6150. The crane undercarriage units and jib hoists are located at the Corps of Engineers Fountain City Service Base, 431 North Shore Drive, PO Box 397, Fountain City, Wisconsin 54629-0397. The Government will load the crane undercarriage units onto Contractor trucks or floating plant. Four pickup beams are located at the Lock and Dam No. 5A Storage Building, W679 State Highway 35, Fountain City, Wisconsin 54629-7214. One pickup beam is located and in use at Lock and Dam No. 10. The contractor is responsible for loading and transporting the four pickup beams from the Lock and Dam No. 5A Storage Building. When the property is picked up, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer. The Contractor shall also report in writing to the Contracting Officer, within 24 hours of pickup, any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work at the expense of the Contractor, unless otherwise indicated in this contract.

b) The following is a list of Government-Furnished Property:

Quantity	Unit	Item	Description
5	EA	Crane Undercarriage	See Bill of Materials on Contract Drawings
5	EA	Pickup Beams	“
2	EA	Jib Hoists	See Drawing M-LG-57/119

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS

“Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

(1) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.

(2) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.”

(End of Clause)

SECTION 00830

ATTACHMENTS

SECTION 00830 - ATTACHMENTS

ATTACHMENT NO. A

RATES OF WAGES:

General Decision No.	Construction Type		Page Nos.
IA000031	Heavy		IA000031-1
		through	IA000031-4
MN000059	Heavy		MN000059-1
		through	MN000059-8
WI000019	Heavy		WI000019-1
		through	WI000019-16

SECTION 00830 - ATTACHMENTS

ATTACHMENT NO. B

PAINT ANALYSIS - LEAD AND CHROMIUM:

Description	No. of Sheets
Paint Analysis - Lead and Chromium - L/D'S 4 - 10	1
Laboratory Analysis Report, January 5, 2000	6

General Decision Number IA000031

General Decision Number **IA000031**
Superseded General Decision No. IA990031
State: Iowa
Construction Type:
RIVER WORK
County(ies):
STATEWIDE
SCOTT COUNTY ONLY FOR POWER EQUIPMENT OPERATORS
HEAVY CONSTRUCTION PROJECTS FOR WORK ON OR PERTAINING
TO THE MISSISSIPPI AND MISSOURI RIVERS.

Modification Number	Publication Date
0	02/11/2000

COUNTY(ies):
STATEWIDE

ENGI0150I 01/01/2000

	Rates	Fringes
SCOTT COUNTY:		
POWER EQUIPMENT OPERATORS:		
GROUP 1:	21.40	9.45
GROUP 2:	21.40	9.45
GROUP 3:	18.75	9.45
GROUP 4:	18.75	9.45
GROUP 5:	17.70	9.45

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1:Cranes; Shovel; Clamshell; Dragline; Backhoe; Derrick; Tower Crane; Cable Way; Concrete Spreaders (servicing 2 pavers); Asphalt Spreaders; Asphalt Mixer; Plant Engineers; Dipper Dredge Operator; Dipper Dredge Cranemen; Dual Purpose Trucks (Boom or Winch); Leverman or Engineman (Hydraulic Dredge); Mechanics; Paving Mixer with tower attached (two operators required); Piledriver; Boom Tractor, Stationary, Portable or Floating Mixing Plant; Trenching Machine (over 40 HP), Building Hoist (2 drums), Hot Paint Wrapping Machine; Cleaning & Priming Machine, Backfiller (throw bucket), Locomotive Engineer; qualified Welder; Tow or Push Boat; Concrete Paver; Seaman trav-L-plant or similar Machine; CMI Autograder or similar machine; Slip Form Paver; Caisson Augering Machine, Mucking Machine, Asphalt Heat Planer Unit; Hydraulic Cranes; Mine Hoists.
Group 2: Athey; Barber-Green; Euclid or Haiss loader; Asphalt Pug Mill; Fireman & Drier; Concrete Pump; Concrete Spreader(servicing 1 paver); Bulldozer; Endloader; Log Chippers or similar machines; Elevating Grader;Group Equipment Greaser, LeTourneaupul & similar machines; DW-10; Hyster Winch & similar machines; Motor Patrol; Power Blade; Push Cat; Tractor pulling elevating grader or power blade; Tractor operating scoop or scraper, Tractor with power Attachments; Roller on Asphalt or Blacktop; single drum hoist; Jaeger mix & Plant Machine; Pipe bending Machine; Flexaplane or similar Machine, Automatic Curbing Machine; Automatic Cement & Gravel batch plants (1 stop set-up); Seaman pulvi-mixer or similar Machine, Blastholer; Self-propelled Rotary Drill or similar Machines; Work Boat; Combination concrete finishing & float; Self-propelled sheep foot roller or compactor (used in conjunction with a grading spread); Asphalt Spreader Screed Operator; Slusher; Apsco Spreader or similar Machine;

Forklift (over 6000 lbs. capacity or working at heights above 28 ft.); Concrete Conveyors, Chip Spreader; Underground Boring Machine; Straddle Carrier; Hydro-Hammer; Hydraulic Pumps or power Units driven by any power source (except manually); used to hoist or lift machinery or material; Off Road Haul Units.
GROUP 3: Asphalt Boosters; Firemen and Pump Operators at Asphalt Plants; Mud Jack; Concrete Finishing Machine, Form Grader with Roller on Earth; Mixers (3 Bag to 16-E); Power Operated Bull Float; Tractors without Power Attachments; Dope Pots (Agitating Motor); Dope Chop Machines; Distributors (back end); Portable Machine Fireman; Power winch on paving work; self-propelled roller or compactor (other than provided for above); Pump Operator (more than one well-point pump); Portable Crusher Operator, Trench Machine (under 40 hp); Power Subgrader (on forms) or similar machines, Forklift (6000 lb. or less cap.); Gypsum Pump; Conveyor over 20 hp.; Fuller Kenyon Cement Pump or similar machines.
GROUP 4: Light Plant; Mixers (1 or 2 bag); Power Batching Machine (Cement Auger or Conveyor); Boiler (Engineer or Fireman); Mechanical Broom; Automatic Cement and Gravel Batch Plants (two or three stop set-up); Small rubber-tired Tractors (nor including backhoe or endloaders); Self-propelled Curing Machine; Driver on Truck crane or similar machines.
GROUP 5: Oilers; Mechanical Heater (other than Steam Boiler), Belt Machine, Small Outboard Motor Boats Safety Boat & Lift Boat), Engine Driven Welding Machine & Small tractors (used to unroll wire mesh), Water Pumps, Air Compressors, Permanent Automatic Elevators.

ENGI0234G 12/01/1998

	Rates	Fringes
REMAINING COUNTIES		
POWER EQUIPMENT OPERATORS:		
GROUP 1	20.40	6.92
GROUP 2	19.75	6.92
GROUP 3	18.20	6.92

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Power shovel, crane, backhoe (1.5 yd and over), dragline, hoisting engineer (steel erection), motor patrol (finish), piledriver, master mechanic, sideboom tractor, horizontal boring machine, finish dozer, central mix plant, paver or self propelled spreader, tow safety, or push boat, CMI paver, subgrader or equivalent, asphalt plant, pushcat, mechanics - welders, churn or rotary drill, trenching machine (Cleveland 80 or similar capacity), asphalt laydown, asphalt screed, asphalt heater planer, concrete pump, self-propelled curb machine (with seat), loader operator (2 cu yd and over), scraper, dozer (rough), group greaser, asphalt roller, backhoes of any size when digging building footings.
GROUP 2: Motor patrol (rough), concrete curb breaking machine, loader (under 2 yd), backhoe under 1/2 yd, concrete widening machine, paver breaker, Barber Green, Haiss loader or similar machines, crawler tractor (pulling disc, sheepsfoot, ripper, or flat roller), self-propelled sheepsfoot roller, self-propelled roller, dristributor, screening and washing plant, self-propelled vibrating compactor, trenching machine, steel placing machine, conveyor, finishing machine (on concrete), flex plane, bullfloat, form grader, self-propelled elevator grader, water wagon on compaction
GROUP 3: Boiler, mechanical boom, oiler, welding machine,

Pump (other than dredge), boom and winch trucks, compressor, tank car heater (combination boiler and booster), pumps on well points and deep wells for dewatering, truck crane combination driver-oiler, concrete curbing machine, batch plant (dry), spreader attachments, utility tractor with attachments, light plant mechanical heater, pumps over 3", farm type tractor (pulling disc, harrow or roller).

SUIA5016A 12/01/1998

	Rates	Fringes
RATES NOT APPLICABLE TO SCOTT COUNTY:		
CARPENTERS AND PILEDRIVERMEN	18.65	4.35
CEMENT MASONS	17.57	4.05
IRONWORKERS:		
WOODBURY & Monona Counties	16.25	5.80
Harrison, Pottawattamie, Mills & Fremont Counties	17.42	5.80
Dubuque, Claytono & Allamakee Counties	19.03	6.59
Jackson, Clinton, Louisa & Muscatine Counties	22.93	5.80
Des Moines and Lee Counties	17.45	8.21 .
LABORERS:		
GROUP 1	17.63	4.25
GROUP 2	16.03	4.25
GROUP 3	13.65	4.25
TRUCK DRIVERS	16.80	4.30

LABORERS CLASSIFICATIONS:
GROUP 1: Pipelayers, sandblaster, gunnite nozzleman, diamond and core drills powered by air, sewer utility man and laser operator, all work performed by laborers working from a bos'n chair, swinging stage, tagline or block and tackle, drill operators of air tracks, wagon drills and similar drills, steel highway formsetter, stingman, powerman blaster, asphalt luteman and rakers, asphalt distributor operators, concrete saw operators, and skilled concrete laborers, deckhands.
GROUP 2: Tree climber, form stetter, potmen (not mechnical), depth grade checker, and cutting torches on demolition work, trencher operator (walk behind), safety boat operators, power buggyman, concrete and paving sawmen, form line and expansion joint assembler, bottomman, caulker-jointer and painter (striper), timber and chair-sawman, mechanical stresser or strechman on post-tension or pre-stressed concret on or off job, form tamper, air-gas and electric tool operators-vibrators-Barco hammer-Pavec-tampers-electric drills-hammers and jackhammers, tree groundman, chair tenders-tool room men and checkers, concrete processing material and monitors, stringman on paving work, broom operator (not self propelled), fence erectors, handling and placing of metal mesh, dowel bars, reinforcing bars and chairs, dumpmen and spotters, carring reinforcing rods, corrugated culvert pipe, stake chaser, seeding or mulching and planting of trees shrubs and flowers, water pumps (under 3"), compressors (under 400 CFM), general laborer, rodman, hot asphalt labor, carpenter tender, concrete finsher tender.
GROUP 3: Waterboy, flageman, flagger/traffic control, watchman.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR?5.5(a

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
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Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

General Decision Number MN000059

General Decision Number **MN000059**
Superseded General Decision No. MN990059
State: Minnesota
Construction Type:
HEAVY
County(ies):

AITKIN	KANABEC	PENNINGTON
BECKER	KANDIYOHI	PINE
BELTRAMI	KITTSON	PIPESTONE
BIG STONE	KOOCHICHING	POPE
BLUE EARTH	LAC QUI PARLE	RED LAKE
BROWN	LAKE	REDWOOD
CARLTON	LAKE OF THE WOODS	RENVILLE
CASS	LE SUEUR	RICE
CHIPPEWA	LINCOLN	ROCK
CLEARWATER	LYON	ROSEAU
COOK	MAHNOMEN	SIBLEY
COTTONWOOD	MARSHALL	STEELE
CROW WING	MARTIN	STEVENS
DODGE	MCLEOD	SWIFT
DOUGLAS	MEEKER	TODD
FARIBAULT	MILLE LACS	TRAVERSE
FILLMORE	MORRISON	WABASHA
FREEBORN	MOWER	WADENA
GOODHUE	MURRAY	WASECA
GRANT	NICOLLET	WATONWAN
HUBBARD	NOBLES	WILKIN
ITASCA	NORMAN	WINONA
JACKSON	OTTER TAIL	YELLOW MEDICINE

HEAVY CONSTRUCTION PROJECTS (Does not include Water & Sewer Line or Treatment Plants)

Modification Number	Publication Date
0	02/11/2000
1	03/10/2000
2	05/05/2000
3	05/19/2000
4	06/02/2000
5	07/07/2000
6	07/28/2000
7	08/18/2000
8	12/01/2000

COUNTY(ies):

AITKIN	KANABEC	PENNINGTON
BECKER	KANDIYOHI	PINE
BELTRAMI	KITTSON	PIPESTONE
BIG STONE	KOOCHICHING	POPE
BLUE EARTH	LAC QUI PARLE	RED LAKE
BROWN	LAKE	REDWOOD
CARLTON	LAKE OF THE WOODS	RENVILLE
CASS	LE SUEUR	RICE
CHIPPEWA	LINCOLN	ROCK
CLEARWATER	LYON	ROSEAU
COOK	MAHNOMEN	SIBLEY
COTTONWOOD	MARSHALL	STEELE

CROW WING	MARTIN	STEVENS
DODGE	MCLEOD	SWIFT
DOUGLAS	MEEKER	TODD
FARIBAULT	MILLE LACS	TRAVERSE
FILLMORE	MORRISON	WABASHA
FREEBORN	MOWER	WADENA
GOODHUE	MURRAY	WASECA
GRANT	NICOLLET	WATONWAN
HUBBARD	NOBLES	WILKIN
ITASCA	NORMAN	WINONA
JACKSON	OTTER TAIL	YELLOW MEDICINE

ELEC0110J 05/01/1999

	Rates	Fringes
GOODHUE (West of Belle Creek, Minneola, Roscoe & Vasa Townships), KANABEC (South of Hillman, Peace & Pomroy Townships), LE SUEUR (East of Cleveland, Sharon, Tyrone & Washington Townships), MILLE LACS (South of Bradbury, Lewis & Onamia Townships), PINE (South of Arione, Barry, Clover, Hinckley & Ogema Townships) & RICE COUNTIES:		
ELECTRICIANS	24.71	10.69
CABLE SPLICERS	25.71	10.69

ELEC0242F 06/01/2000

	Rates	Fringes
AITKIN, CARLTON, CASS (Bounded on the north by the south line of Leech Lake, Minnesota Island, Could, Bay River & Salem Townships), COOK, CROW WING, HUBBARD (Except Rockwood, Helga, Farden, Lake Hattie, Schoolcraft, Guthrie, Hart Lake, Lake Alice, Lake George, Hendrickson & Lakeport), ITASCA (Southerly 12 Townships, including Harris, Feely, Blackberry, Spang, Coodland, Sago & Wawina), KANABEC (Northern part, including Brook, Ford, Krosche, Hillman, Peace & Pomroy Townships), LAKE, MILLE LACS (Including Northerly Townships of Kathio, South Harbor, Isle, East Side, Onamia & Harbor), MORRISON, PINE (Excluding southerly Townships of Brook Park, Mission Creek, Munch, Crosby, Pokegama, Cross Lake, Chengwatana, Royalton, Rock Creek & Pine City), TODD & WADENA COUNTIES:		
ELECTRICIANS	27.76	9.16

ELEC0292I 05/31/1999

	Rates	Fringes
BIG STONE, CHIPPEWA, KANDIYOHI, LAC QUI PARLE, MCLEOD, MEEKER, POPE, STEVENS & SWIFT COUNTIES:		
ELECTRICAL INSTALLATIONS OVER $300,000.00:		
ELECTRICIANS	22.95	9.36
CABLE SPLICERS	23.95	9.39
ELECTRICAL INSTALLATIONS UNDER $300,000.00:		
ELECTRICIANS	20.00	8.55
CABLE SPLICERS	21.00	8.58

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* ELEC0294H 06/01/2000

	Rates	Fringes
CASS (Northern part, bounded on the south by a line extending east & west of the south line of Boy River & Salem Townships), HUBBARD (Northern part, bounded on the south by a line extending east & west of the south line of Lake Alice & Lake George Townships) & KOOCHICHING COUNTIES:		
ELECTRICIANS	24.70	9.76
CABLE SPLICERS	25.25	9.97

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* ELEC0294K 06/01/2000

	Rates	Fringes
BELTRAMI, CLEARWATER, ITASCA (Excluding the section south of a line extending east & west of the south line of Grand Rapids & Trout Lake Townships) & LAKE OF THE WOODS (Excluding the northwest angle) COUNTIES:		
ELECTRICIANS:		
Electrical Installations Under $3,000,000.00	20.05	7.08
All Other Work:		
Electricians	24.70	9.76
Cable Splicers	25.25	9.97

ELEC0343L 05/31/1999

	Rates	Fringes
BLUE EARTH, BROWN, COTTONWOOD, DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE (Except that portion west of Belle Creek, Minneola, Roscoe & Vasa Townships), JACKSON, LE SUEUR (Cleveland, Le Sueur, Ottawa, Sharon, Tyrone, Washington & Kasota Townships), LINCOLN, LYON, MARTIN, MOWER, NICOLLET, REDWOOD, RENVILLE, SIBLEY, STEELE, WABASHA, WASECA, WATONWAN, WINONA & YELLOW MEDICINE COUNTIES:		
ELECTRICAL INSTALLATIONS OVER $300,000.00:		
ELECTRICIANS	22.99	9.12
CABLE SPLICERS	23.99	9.26
ELECTRICAL INSTALLATIONS UNDER $300,000.00:		
ELECTRICIANS	20.24	8.75
CABLE SPLICERS	21.24	8.89

ELEC0426E 06/01/1999

	Rates	Fringes
MURRAY, NOBLES, PIPESTONE & ROCK COUNTIES:		
0 TO 10 MILES FROM THE CITIES OF ABERDEEN & WATERTOWN, SOUTH DAKOTA; & WORTHINGTON, MINNESOTA; AND 0 TO 70 MILES FROM SIOUX FALLS, SOUTH DAKOTA:		
ELECTRICIANS	19.00	6.105
CABLE SPLICERS	20.90	6.34
BEYOND THE AFOREMENTIONED AREAS:		
ELECTRICIANS	21.40	6.405
CABLE SPLICERS	23.54	6.67

ELEC1426I 06/01/1998

	Rates	Fringes
BECKER, DOUGLAS, GRANT, KITTSON, MAHNOMEN, MARSHALL, NORMAN, OTTER TAIL, PENNINGTON, RED LAKE, ROSEAU, TRAVERSE & WILKIN COUNTIES:		
ELECTRICIANS	14.70	4.64
CABLE SPLICERS	15.45	4.73

ENGI0049W 05/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
AITKIN, BLUE EARTH, CARLTON, CASS (South of the northern right-of-way of U.S. Hwy #2 & east of the western right-of-way of U.S. Hwy #371), CROW WING (East of the western right-of-way of U.S. Hwy #371), DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, ITASCA (East of the western right-of-way of Minnesota Hwy #6), KANABEC, KOOCHICHING (East of a north-south line from the Canadian border to Pelland, the western right-of-way of U.S. Hwy #71 from Pelland to Big Falls & Minnesota Hwy #6), LE SUEUR, MILLE LACS, MORRISON (East of the western right-of-way of U.S. Hwy #371 & U.S. Hwy #10 from Little Falls to the Morrison-Benton County		

line), MOWER, PINE, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES; & BROWN, MCLEOD, MARTIN, MEEKER, NICOLLET, SIBLEY & WATONWAN COUNTIES (East of the western right-of-way of Minnesota Hwy #15):

GROUP 1	22.76	7.15
GROUP 2	22.31	7.15
GROUP 3	22.14	7.15
GROUP 4	22.01	7.15
GROUP 5	19.44	7.15
GROUP 6	18.57	7.15

BECKER, BELTRAMI, BIG STONE, CASS (Excluding area south of the northern right-of-way of U.S. Hwy #2 & east of the western right-of-way of U.S. Hwy #371), CHIPPEWA, CLEARWATER, COTTONWOOD, CROW WING (Excluding area east of the western right-of-way of U.S. Hwy #371), DOUGLAS, GRANT, HUBBARD, ITASCA (Excluding area east of the western right-of-way of Minnesota Hwy #6), JACKSON, KANDIYOHI, KITTSON, KOOCHICHING (Excluding area east of a north-south line from the Canadian border to Pelland, the western right-of-way of U.S. Hwy #71 from Pelland to Big Falls & Minnesota Hwy #6), LAC QUI PARLE, LAKE OF THE WOODS, LINCOLN, LYON, MAHNOMEN, MARSHALL, MORRISON (Excluding area east of the western right-of-way of U.S. Hwy #371 & U.S. Hwy #10 from Little Falls to the Morrison-Benton County line), MURRAY, NOBLES, NORMAN, OTTER TAIL, PENNINGTON, PIPESTONE, POPE, RED LAKE, REDWOOD, RENVILLE, ROCK, ROSEAU, STEVENS, SWIFT, TODD, TRAVERSE, WADENA, WILKIN & YELLOW MEDICINE COUNTIES; & BROWN, MCLEOD, MARTIN, MEEKER, NICOLLET, SIBLEY & WATONWAN COUNTIES (Excluding the area east of the western right-of-way of Minnesota Hwy #15):

GROUP 1	20.75	7.15
GROUP 2	19.82	7.15
GROUP 3	19.62	7.15
GROUP 4	19.51	7.15
GROUP 5	17.80	7.15
GROUP 6	17.20	7.15

COOK & LAKE COUNTIES:

GROUP 1	24.37	7.15
GROUP 2	23.82	7.15
GROUP 3	23.64	7.15
GROUP 4	23.52	7.15
GROUP 5	20.48	7.15
GROUP 6	19.27	7.15

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1 - *Crane with over 135' Boom, excluding Jib; & Hydraulic Backhoe and/or other similar equipment with Shovel-type Controls 3 cu. yds. & over Mfg. rated Cap.

GROUP 2 - Hydraulic Backhoe and/or similar equipment with Shovel-type Controls, up to 3 cu. yds. Mfg. rated cap.; Front End Loader, 5 cu. yds. & over; Locomotive Crane; Master Mechanic; Tandem Scraper; Tractor - Boom type; & Truck Crane - Crawler Crane

GROUP 3 - Dual Tractor; & Scraper - Struck Cap. 32 cu. yds. & over

GROUP 4 - Bituminous Roller (8 Tons & over); Cat Tractor with Rock Wagon or similar type; Front End Loader, over 1 cu. yd.; Mechanic; Rubber-tired Farm Tractor, Backhoe Attach.; Scraper, up to 32 cu. yds.; Skid Steer Loader, over 1 cu. yd. with Backhoe Attachment; Tractor, Bulldozer; Tractor Operator, over 50 HP with Power Take-off; & Dismantling or Repair Mechanic

GROUP 5 - Bituminous Roller (Under 8 tons); Bituminous Rubber-tired Roller; Front End Loader, up to & incl. 1 cu. yd.; Loader

(Barber Greene or similar type); & Tractor Operator, Bulldozer, 50 HP or less
GROUP 6 - Mechanic Tender; Mechanic, Space Heater (Temporary Heat); Roller on Gravel Compaction; Sheep Foot Roller; Tractor, Wheel type (over 50 HP); & Truck Crane Oiler
CRANE OVER 135' BOOM, EXCLUDING JIB - $ .25 PREMIUM;
CRANE OVER 200' BOOM, EXCLUDING JIB - $ .50 PREMIUM
UNDERGROUND WORK:
TUNNELS, SHAFTS, ETC. - $ .25 PREMIUM
UNDER AIR PRESSURE - $ .50 PREMIUM
HAZARDOUS WASTE PROJECTS (PPE Required):
LEVEL A - $1.25 PREMIUM
LEVEL B - $ .90 PREMIUM
LEVEL C - $ .60 PREMIUM

IRON0184D 05/01/2000

	Rates	Fringes
JACKSON, LINCOLN, MARTIN, MURRAY, NOBLES, PIPESTONE & ROCK COUNTIES:		
IRONWORKERS	17.46	5.415

IRON0512L 05/01/2000

	Rates	Fringes
BIG STONE, BLUE EARTH, BROWN, CHIPPEWA, COTTONWOOD, DODGE, DOUGLAS, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, GRANT, KANABEC, KANDIYOHI, LAC QUI PARLE, LE SUEUR, LYON, MCLEOD, MEEKER, MILLE LACS, MORRISON, MOWER, NICOLLET, OTTER TAIL, POPE, REDWOOD, RENVILLE, RICE, SIBLEY, STEELE, STEVENS, SWIFT, TODD, TRAVERSE, WABASHA, WADENA, WASECA, WATONWAN, WINONA & YELLOW MEDICINE COUNTIES:		
IRONWORKERS	27.15	9.94

IRON0563K 05/01/2000

	Rates	Fringes
AITKIN, BECKER, BELTRAMI, CARLTON, CASS, CLEARWATER, COOK, CROW WING, HUBBARD, ITASCA, KOOCHICHING, LAKE, LAKE OF THE WOODS, MAHNOMEN, PENNINGTON, PINE, RED LAKE & ROSEAU COUNTIES:		
IRONWORKERS	22.13	11.35

IRON0793E 05/01/2000

	Rates	Fringes
KITTSON, MARSHALL, NORMAN & WILKIN COUNTIES:		
IRONWORKERS	18.00	8.37

LABO9900N 05/01/2000

	Rates	Fringes
AITKIN, BECKER, BELTRAMI, BIG STONE, CASS, CHIPPEWA, CLEARWATER, COTTONWOOD, CROW WING, DOUGLAS, GRANT, HUBBARD, JACKSON, KANDIYOHI, KITTSON, KOOCHICHING, LAC QUI PARLE, LAKE OF THE WOODS, LINCOLN, LYON, MAHNOMEN, MARSHALL, MARTIN, MCLEOD, MEEKER, MORRISON, MURRAY, NOBLES, NORMAN, OTTER TAIL, PENNINGTON, PIPESTONE, POPE, RED LAKE, REDWOOD, RENVILLE, ROCK, ROSEAU, SIBLEY, STEVENS, SWIFT, TODD, TRAVERSE, WADENA, WATONWAN, WILKIN & YELLOW MEDICINE COUNTIES:		
LABORERS:		
Pipelayer	15.34	4.61
Tunnel	15.04	4.61
Flagger	12.34	4.56
BLUE EARTH, BROWN, DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE, LE SUEUR, MOWER, NICOLLET, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES:		

LABORERS:
 Pipelayer 18.94 5.21
 Tunnel 18.64 5.21
 Flagger 15.04 5.01
CARLTON, COOK & LAKE COUNTIES:
LABORERS:
 Pipelayer 20.87 5.56
 Tunnel 20.57 5.56
 Flagger 16.32 5.31
ITASCA COUNTY:
LABORERS:
 Pipelayer 20.47 5.96
 Tunnel 20.17 5.96
 Flagger 16.32 5.31
KANABEC & MILLE LACS COUNTIES:
LABORERS:
 Pipelayer 17.79 5.31
 Tunnel 17.49 5.31
 Flagger 13.89 5.11
PINE COUNTY:
LABORERS:
 Pipelayer 21.74 5.56
 Tunnel 21.44 5.56
 Flagger 17.04 5.31

 PLUM0006D 08/01/2000

 Rates Fringes

DODGE, FARIBAULT, FILLMORE, FREEBORN, GOODHUE (Southern half),
 MOWER, RICE, STEELE, WABASHA, WASECA & WINONA COUNTIES:
PIPEFITTERS:
 Mechanical Contracts Up to
  $75,000.00 22.00 7.85
 All Other Mechanical Contracts 27.51 7.85

 PLUM0011G 05/01/2000

 Rates Fringes

CARLTON, COOK (A strip 20 miles inland along the shores of Lake
 Superior), KANABEC, LAKE (A strip 20 miles inland along the
 shores of Lake Superior) & PINE COUNTIES:
PIPEFITTERS 24.40 9.20

 PLUM0126D 05/15/2000

 Rates Fringes

AITKIN, BECKER, BELTRAMI, CASS (Southern half), CLEARWATER,
 CROW WING, DOUGLAS, GRANT, HUBBARD, KITTSON, LAKE OF THE WOODS,
 MAHNOMEN, MARSHALL, NORMAN, OTTER TAIL, PENNINGTON, RED LAKE,
 ROSEAU, TRAVERSE, WADENA & WILKIN COUNTIES:
PIPEFITTERS:
 Total Mechanical Projects up to
  $2,000,000.00, excluding Sheet
  Metal, Fire Protection & Pipe
  Insulation 23.72 7.78
 Total Mechanical Projects of
  $2,000,000.00 & Above, excluding
  Sheet Metal, Fire Protection &
  Pipe Insulation 26.12 7.78

 PLUM0455E 05/01/2000

 Rates Fringes

GOODHUE COUNTY (Northern half):
PIPEFITTERS 28.73 8.92

PLUM0455K 05/01/2000

	Rates	Fringes
BLUE EARTH, BROWN, COTTONWOOD, JACKSON, LE SUEUR, LINCOLN, LYON, MARTIN, MURRAY, NICOLLET, NOBLES, PIPESTONE, REDWOOD, RENVILLE, ROCK, SIBLEY & WATONWAN COUNTIES:		
PIPEFITTERS	22.36	8.61

PLUM0539F 05/01/2000

	Rates	Fringes
MCLEOD & MILLE LACS COUNTIES:		
PIPEFITTERS	26.35	11.28

PLUM0539K 05/01/2000

	Rates	Fringes
BIG STONE, CHIPPEWA, KANDIYOHI, LAC QUI PARLE, MEEKER, MORRISON, POPE, STEVENS, SWIFT, TODD & YELLOW MEDICINE COUNTIES:		
PIPEFITTERS	22.04	11.83

PLUM0589D 06/01/2000

	Rates	Fringes
CASS (North of a parallel line drawn from the northern boundary of Crow Wing County, west to the east boundary of Wadena County), COOK (Except a strip 20 miles inland along the shores of Lake Superior), ITASCA & LAKE (Except a strip 20 miles inland along the shores of Lake Superior) COUNTIES:		
PIPEFITTERS	22.04	10.97
KOOCHICHING COUNTY:		
PIPEFITTERS	23.29	10.97

SUMN2001B 07/08/1994

	Rates	Fringes
CARPENTERS	13.73	2.55
LABORERS:		
Unskilled	12.33	3.18
Landscape Work	5.15	
PAINTERS, Steel	19.42	4.72
POWER EQUIPMENT OPERATORS:		
Dragline	13.41	3.95
Grader	12.03	2.84

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter

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Wage and Hour Division
U. S. Department of Labor
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Washington, D. C. 20210

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U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

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Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

General Decision Number WI000019

General Decision Number **WI000019**
Superseded General Decision No. WI990019
State: Wisconsin
Construction Type:
HEAVY
County(ies):
STATEWIDE
HEAVY CONSTRUCTION PROJECTS (Excluding Tunnel, Sewer, and Water Lines), AND HOPPER DREDGE PROJECTS

Modification Number	Publication Date
0	02/11/2000
1	06/02/2000
2	06/30/2000
3	08/18/2000
4	11/03/2000

COUNTY(ies):
STATEWIDE

* BOIL0107A 07/01/2000

	Rates	Fringes
BOILERMAKERS	24.25	10.67
SMALL BOILER REPAIR (Under 25,000 lbs/hour)	19.40	7.20

BRWI0000A 06/01/2000

	Rates	Fringes
AREA 1: BAYFIELD, DOUGLAS, PRICE, SAYER, AND WASHBURN COUNTIES		
CEMENT MASONS	22.45	8.00
AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, RICHLAND, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, TREMPEALEAU, VERNON, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES		
CEMENT MASONS	21.35	6.60
AREA 3: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES		
CEMENT MASONS	21.40	8.05
AREA 4: KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES		
CEMENT MASONS	22.05	7.40

BRWI0001B 06/01/2000

	Rates	Fringes
CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPEALEAU, AND VERNON COUNTIES		
BRICKLAYERS	22.69	7.90

BRWI0002B 06/01/2000

	Rates	Fringes
ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES		
BRICKLAYERS	24.61	7.88

BRWI0003B 06/01/2000

	Rates	Fringes
BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES		
BRICKLAYERS	22.62	7.97

BRWI0004B 06/01/2000

	Rates	Fringes
KENOSHA, RACINE, AND WALWORTH COUNTIES		
BRICKLAYERS	25.56	8.05

BRWI0006B 06/01/2000

	Rates	Fringes
ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES		
BRICKLAYERS	22.94	7.65

BRWI0007B 06/01/2000

	Rates	Fringes
GREEN, LAFAYETTE, AND ROCK COUNTIES		
BRICKLAYERS	24.29	7.90

BRWI0008B 06/01/2000

	Rates	Fringes
MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES		
BRICKLAYERS	27.13	7.05

BRWI0009B 06/01/2000

	Rates	Fringes
GREEN LAKE, MARQUETTE, OUTAGAMIE, SHAWANO, WAUPACA, WASHARA, AND WINNEBAGO COUNTIES		
BRICKLAYERS	22.62	7.97

BRWI0011C 06/01/2000

	Rates	Fringes
CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES		
BRICKLAYERS	22.62	7.97

BRWI0013B 06/01/2000

	Rates	Fringes
DANE, GRANT, IOWA, AND RICHLAND COUNTIES		
BRICKLAYERS	24.08	8.20

BRWI0019B 06/01/2000

	Rates	Fringes
BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES		
BRICKLAYERS	23.04	7.55

BRWI0021B 06/01/2000

	Rates	Fringes
DODGE AND JEFFERSON COUNTIES		
BRICKLAYERS	24.32	7.85

BRWI0034B 06/01/2000

	Rates	Fringes
COLUMBIA AND SAUK COUNTIES		
BRICKLAYERS	24.48	7.80

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* CARP0087A 05/01/2000

	Rates	Fringes
BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys		

35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES
 CARPENTERS & PILEDRIVER MEN 23.84 9.00
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 * CARP0161D 06/01/2000
 Rates Fringes
KENOSHA COUNTY
 CARPENTERS 23.11 8.21
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 * CARP0161E 06/01/2000
 Rates Fringes
RACINE COUNTY
 CARPENTERS 23.61 7.71

 CARP0252B 06/01/2000
 Rates Fringes
ADAMS, ASHLAND, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GREEN LAKE, IRON, JACKSON, JUNEAU, KEWAUNEE, LA CROSSE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RUSK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPEALEAU, VERNON, VILAS, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES
  CARPENTERS 22.11 6.93
  MILLWRIGHTS 23.66 6.93
  PILEDRIVERMEN 22.61 6.93
FLORENCE COUNTY (Area bordering Michigan State Line), and MARINETTE COUNTY (Northeast part)
  CARPENTERS 19.41 4.45
  MILLWRIGHTS 21.09 5.12
  PILEDRIVER MEN 19.41 4.45

 CARP0264B 06/01/2000
 Rates Fringes
COLUMBIA, CRAWFORD, DANE, DODGE, GRANT, GREEN, IOWA, JEFFERSON, LAFAYETTE, RICHLAND, ROCK, SAUK, AND WALWORTH COUNTIES
 CARPENTERS 21.96 7.12
 MILLWRIGHTS 23.61 7.12
 PILEDRIVERS 22.46 7.12

 CARP0264C 06/01/2000
 Rates Fringes
MILWAUKEE, OZAUKEE, WAUKESHA, AND WASHINGTON COUNTIES
 CARPENTERS 24.85 7.73

 CARP0361D 05/01/2000
 Rates Fringes
BAYFIELD (Western 1/3) AND DOUGLAS COUNTIES
 CARPENTERS & PILEDRIVERMEN 21.09 8.98
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 * CARP2337A 06/01/2000
 Rates Fringes
MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON COUNTIES
 PILEDRIVER MEN 24.34 10.03
KENOSHA COUNTY
 PILEDRIVER MEN 21.56 10.03
RACINE COUNTY (East of Hwy 75)
  PILEDRIVER MEN 21.86 9.63
JEFFERSON (South of I-94), RACINE (West of Hwy 75), AND WALWORTH

COUNTIES
 PILEDRIVER MEN 23.01 8.63
DODGE AND JEFFERSON (North of I-94) COUNTIES
 PILEDRIVER MEN 23.01 8.63
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 * CARP2337C 06/01/2000
Rates Fringes
MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON COUNTIES
 MILLWRIGHTS 22.57 10.13
KENOSHA COUNTY
 MILLWRIGHTS 21.52 9.93
RACINE COUNTY (Area East of Hwy 75)
 MILLWRIGHTS 21.42 9.93
JEFFERSON (South of I-94), RACINE (Area West of Hwy 75), AND WALWORTH COUNTIES
 MILLWRIGHTS 22.62 8.88
DODGE AND JEFFERSON (North of I-94) COUNTIES
 MILLWRIGHTS 23.12 8.18
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 * ELEC0014B 06/01/2000
Rates Fringes
ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK (except Maryville, Colby, Unity, Sherman, Fremont, Lynn & Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST CROIX, SAWYER, TAYLOR, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES
 ELECTRICIANS 22.80 27.8%+2.94
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 * ELEC0127B 09/01/2000
Rates Fringes
KENOSHA COUNTY
 ELECTRICIANS 26.71 23.8%+3.00

 ELEC0158B 06/01/2000
Rates Fringes
BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig), MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE (East of a ine 6 miles West of the West boundary of Oconto County), SHAWANO (Except Area North of Townships of Aniwa and Hutchins) COUNTIES
 ELECTRICIANS 23.62 22.75%+2.96

 ELEC0159D 06/01/2000
Rates Fringes
COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and Emmet Townships), GREEN, LAKE (except Townships of Berlin, Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK COUNTIES
 ELECTRICIANS 25.11 9.41

 ELEC0219D 06/01/2000
Rates Fringes
FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)
ELECTRICIANS:
 Electrical contracts under $90,000 20.46 7.11
 Electrical contracts over $90,000 23.86 10.22

ELEC0242E 06/01/2000

	Rates	Fringes
DOUGLAS COUNTY		
ELECTRICIANS	27.76	33%

ELEC0388B 06/01/2000

	Rates	Fringes
ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Area North of the town of Wausaukee), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Area North of the townships of Aniwa and Hutchins), VILAS AND WOOD COUNTIES		
ELECTRICIANS	23.30	8.51

ELEC0430B 06/01/2000

	Rates	Fringes
RACINE COUNTY (Except Burlington Township)		
ELECTRICIANS	26.09	26.5%+3.00

ELEC0494E 06/01/2000

	Rates	Fringes
MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES		
ELECTRICIANS	25.29	11.67

ELEC0494F 06/01/2000

	Rates	Fringes
CALUMET (Township of New Holstein), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES		
ELECTRICIANS	22.84	11.26

ELEC0577C 06/01/2000

	Rates	Fringes
CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES		
ELECTRICIANS	23.67	23.3%+3.00

ELEC0890C 06/01/2000

	Rates	Fringes
DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES		
ELECTRICIANS	25.43	20.55%+2.75

* ELEC0953A 06/01/2000

	Rates	Fringes
LINE CONSTRUCTION:		
Lineman	26.26	2.10+25.75%
Equipment Operator	21.01	2.10+25.75%
Heavy Groundman Driver	18.38	2.10+25.75%
Light Groundman Driver	17.07	2.10+25.75%
Groundman	14.44	2.10+25.75%

ENGI0139E 06/01/2000

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	25.67	10.00
GROUP 2	25.17	10.00
GROUP 3	24.67	10.00

GROUP 4	24.41	10.00
GROUP 5	24.12	10.00
GROUP 6	23.91	10.00

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, tower cranes, and derricks with or without attachments with a lifting capacity of over 100 tons; or cranes, tower cranes, and derricks with boom, leads and/or jib lengths measuring 176 feet or longer.

GROUP 2: Cranes, tower cranes and derricks with or without attachments with a lifting capacity of 100 tons or less; or cranes, tower cranes, and derricks with boom, leads, and/or jibs lengths measuring 175 feet or under and backhoes (excavators) having a manufacturers rated capacity of 3 cubic yards and over; caisson rigs; pile driver; dredge operator; dredge engineer

GROUP 3: Mechanic or welder - Heavy duty equipment; cranes with a lifting capacity of 25 tons or under; concrete breaker (manual or remote); vibratory/sonic concrete breaker; concrete laser screed; concrete slipform paver; concrete batch plant operator; concrete pvt. spreader - heavy duty (rubber tired); concrete spreader & distributor; automatic subgrader (concrete); concrete grinder & planing machine; concrete slipform curb & gutter machine; slipform concrete placer; tube finisher; hydro blaster (10,000 psi & over); bridge paver; concrete conveyor system; concrete pump; stabilizing mixer (self-propelled); shoulder widener; asphalt plant engineer; bituminious paver; bump cutter & grooving machine; milling machine; screed (bituminous paver); asphalt heater, planer & scarifier; backhoes (excavators) having a manufacturer's rated capacity of under 3 cu yds; grader or motor patrol; tractor (scraper, dozer, pusher, loader); scraper - rubber tired (single or twin engine); endloader; hydraulic backhoe (tractor type); trenching machine; skid rigs; tractor, side boom (heavy); drilling or boring machine (mechanical heavy); roller over 5 tons; percussion or rotary drilling machine; air track; blaster; loading machine (conveyor); tugger; boatmen; winches & A-frames; post driver; material hoist

GROUP 4: Greaser, roller steel (5 tons or less); roller (pneumatic tired) - self propelled; tractor (mounted or towed compactors & light equipment); shouldering machine; self-propelled chip spreader; concrete spreader; finishing machine; mechanical float; curing machine; power subgrader; joint sawer (multiple blade) belting machine; burlap machine; texturing machine; tractor endloader (rubber tired) - light; jeep digger; forklift; mulcher; launch operator; fireman, environmental burner

GROUP 5: Air compressor; power pack; vibrator hammer and extractor; heavy equipment, leadman; tank car heaters; stump chipper; curb machine operator; proportioning plants; generators; mudjack operator; rock breaker; crusher or screening plant; screed (milling machine); automatic belt conveyor and surge bin; pug mill operator

GROUP 6: Oiler; pump (over 3 inches)

ENGI0139I 06/01/2000

	Rates	Fringes
STATEWIDE EXCEPT KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA COUNTIES		
POWER EQUIPMENT OPERATORS (LOCK AND DAM WORK):		
GROUP 1	25.57	10.00
GROUP 2	25.07	10.00
GROUP 3	24.57	10.00
GROUP 4	24.04	10.00
GROUP 5	21.97	10.00

GROUP 6 21.34 10.00

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) having a manufacturer's rated capacity of 3 cu yd and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) under 3 cu yd; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete and Grout Pumps; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder

GROUP 5: Tractor, Bulldozer, or End Loader (over 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweeeprs; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freese Machine; Boiler Operators (temporary heat) Forklifts; Welding Machines; Generators, over or under 150 kw; Compressors, under 400 CFM; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Conveyor; Elevator Operator

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IRON0008B 06/01/2000

	Rates	Fringes
BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:		
IRONWORKERS	23.16	10.48

IRON0008D 06/01/2000

	Rates	Fringes
KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3), WASHINGTON, AND WAUKESHA COUNTIES		
IRONWORKERS	24.97	10.48

IRON0383A 06/01/2000

	Rates	Fringes
ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (EXCLUDING S.E. TIP), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES:		
IRONWORKERS	23.30	9.86

IRON0498E 06/01/2000

	Rates	Fringes
GREEN (S.E. 1/3), ROCK (South of Edgerton and Milton), and WALWORTH (S.W. 2/3) COUNTIES:		
IRONWORKERS	27.00	13.475

IRON0512H 05/01/2000

	Rates	Fringes
BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK (S.W. half), ST CROIX, TAYLOR, AND TREMPEALEAU COUNTIES		
IRONWORKERS	27.15	9.94

IRON0563D 05/01/2000

	Rates	Fringes
ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN (E. 1/4), ONEIDA, PRICE, RUSK (N.E. half), SAWYER, VILAS AND WASHBURN COUNTIES		
IRONWORKERS	22.13	11.35

LABO0113B 06/01/2000

	Rates	Fringes
MILWAUKEE AND WAUKESHA COUNTIES		
LABORERS:		
GROUP 1	18.60	8.04
GROUP 2	18.75	8.04
GROUP 3	18.95	8.04
GROUP 4	19.10	8.04
GROUP 5	19.25	8.04
GROUP 6	20.61	8.04
GROUP 7	21.06	8.04
GROUP 8	21.83	8.04
GROUP 9	15.09	8.04

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning TOrch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman
GROUP 6: Topman (Sewer and Water)
GROUP 7: Bottomman (Sewer and Water)
GROUP 8: Pipelayer (Sewer and Water)
GROUP 9: Flagperson; traffic control person

LABO0113C 06/01/2000

	Rates	Fringes
OZAUKEE AND WASHINGTON COUNTIES		
LABORERS:		
GROUP 1	17.85	8.04
GROUP 2	17.95	8.04
GROUP 3	18.00	8.04
GROUP 4	18.20	8.04
GROUP 5	18.05	8.04
GROUP 6	20.64	8.04
GROUP 7	21.06	8.04
GROUP 8	21.83	8.04
GROUP 9	14.94	8.04

LABORERS CLASSIFICATIONS
GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler
GROUP 2: Air Tool Operator; Joint Sawer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated);
GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man
GROUP 4: Line and Grade Specialist
GROUP 5: Blaster; powderman
GROUP 6: Topman (Sewer and Water)
GROUP 7: Bottom Man (Sewer and Water)
GROUP 8: Pipelayer (sewer & water)
GROUP 9: Flagperson and Traffic Control Person

LABO0140C 06/01/2000

	Rates	Fringes
BUFFALO, CRAWFORD, GRANT, JACKSON, JUNEAU, LA CROSSE, MONROE, RICHLAND, TREMPEALEAU, AND VERNON COUNTIES		
LABORERS:		
GROUP 1	18.64	5.81
GROUP 2	19.09	5.81

LABORERS CLASSIFICATIONS
GROUP 1: General laborer; caisson top man; cement and concrete workers; handling of precast concrete decking products; terrazzo and tile laborers; wreckers; railroad work; power buggie; powered sweepers; form strippers; form oiler; form cleaner; concrete dump men; pit man; signal man; scaffold builder; hod carrier; torch man; concrete saw; mud jack; air drill; fork lift operator; flagman and water boy Jack hammer; air spade; roofing laborer; mortar and plaster mixers; plaster and concrete pump; nozzle man; gunnite man; creosote workers Swing or stage scaffold on chimney and tower Drill operators tunnel and caisson
GROUP 2: Pipelayers

LABO0237C 06/01/2000

	Rates	Fringes
KENOSHA AND RACINE COUNTIES		

LABORERS:
GROUP 1 20.16 7.16
GROUP 2 20.31 7.16

LABORERS CLASSIFICATIONS

GROUP 1: Tending to carpenters; stripping of forms; cleaning lumber; oiling lumber and forms; pouring, puddling and spreading of concrete; laying and pulling wire mesh; excavating for buildings; cleaning of debris; handling of rods or steel for reinforcement; shoring and moving of buildings; operating vibrators, air spades, and all other pneumatic or electric tools; mechanical concrete buggies; prime buggies; forklifts; concrete pump nozzleman; jack hammer; concrete buster and caisson workers, and on work where both employees are needed to operate same; waterman; and flagman

GROUP 2: Tending to and mixing all materials for brick, stone masons, marble and tile setters; building scaffolds; cleaning floors, windows, pipes and tile; plasterer laborer; tending to and mixing all materials for plasterers; drying of plaster when done by salamander heat; building scaffolds and cleaning up after the plasterers; wrecking of buildings of more than one story or where the work is considered hazardous; torch burner; demolition man

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LABO0317B 06/01/2000

Rates Fringes

BARRON, CHIPPEWA, CLARK (Western half), DUNN, EAU CLAIRE, PEPIN PIERCE, POLK, RUSK, ST. CROIX, AND TAYLOR (Western half)

LABORERS:
GROUP 1 18.37 6.01
GROUP 2 18.42 6.01

LABORERS CLASSIFICATIONS

GROUP 1: General laborer; vibrator operator; gunniteman; nozzleman; scaffold builder; wrecking; blaster tender; mesh mucker; terrazzo laborer; flagman; plaster tender, sandblaster; jackhammer; paving breaker; chipping hammer

GROUP 2: Mason tender

LABO0464D 06/01/2000

Rates Fringes

COLUMBIA, DANE, IOWA, JEFFERSON (Northern half), SAUK AND WALWORTH COUNTIES

LABORERS:
GROUP 1 18.44 6.01

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Asbestos Laborer; Hod Carrier; Mortar Mixer, Hazardous Waste and Landfill workers

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LABO0539B 06/01/2000

Rates Fringes

ADAMS, BROWN, CALUMET, CLARK (Eastern half), DODGE, DOOR, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, KEWAUNEE, LANGLADE LINCOLN, MANITOWOC, MARATHON, MARINETTE (excluding Niagara), MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, PORTAGE, PRICE SHAWANO, SHEBOYGAN, TAYLOR (Eastern half), VILAS, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

LABORERS:
GROUP 1 17.71 6.01

LABORERS CLASSIFICATIONS

GROUP 1: Construction laborer; form stripper, form oiler form cleaner; dump men; pit men; building wrecker; plumber's laborer; motorized buggy operator; concrete laborer; air

spade and chipping hammer; drag tender and signal man; concrete pumps and nozzleman; bituminous worker; mesh mucker; skid loader; materials mover; plaster tender; hod carrier; dry cement handler; kettlemen; vibrator operator; tile setter tender; core drill operator; burner on wrecking; air operator; sheeting driver; power tamper; creosote worker; mudjack operator; bituminous raker and luteman; chipping hammer on tank line; mason tender; mortar and plaster mixer; jackhammer operator; gunnite man; concrete breaker; jumping jack; terrazzo grinder; forklift operator; bobcat operator; precast erector; caisson bottom man; work on swinging scaffold; all high work including construction demolition in excess of 30 ft on free standing industrial chimneys and tower, tanks; skip form work and grain elevators; asbestos demolition laborer flagman

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LABO1050A 06/01/2000

	Rates	Fringes
BAYFIELD, BURNETT, DOUGLAS, IRON, SAWYER, AND WASHBURN COUNTIES		
LABORERS:		
GROUP 1	18.78	6.31
GROUP 2	19.03	6.31
GROUP 3	19.13	6.31
GROUP 4	19.23	6.31
GROUP 5	19.33	6.31

LABORERS CLASSIFICATIONS

GROUP 1: General laborer; concrete work; mason tender; tile setter & terrazzo tenders; demolition and wrecking; roofing tender; underpinning, lagging, bracing, shoring; jack man on slip form; vibrator; landscaping; bituminous worker; asbestos removal laborer; hazardous waste worker; hydro-blaster;

GROUP 2: Buffing machine operator; raker; luteman

GROUP 3: Cement manhole builder; plaster laborer; steel burners; steel form setter; jack hammer; air tools

GROUP 4: Miners tunnels; underground sewers; drilling, blasting and all compressed air work underground or in compression chambers

GROUP 5: Dynamite person

LABO1050B 06/01/2000

	Rates	Fringes
ASHLAND COUNTY		
LABORERS:		
GROUP 1	17.33	6.21
GROUP 2	17.58	6.21
GROUP 3	17.68	6.21
GROUP 4	17.78	6.21
GROUP 5	17.88	6.21

LABORERS CLASSIFICATIONS

GROUP 1: General laborer; concrete work; mason tender; tile setter & terrazzo tenders; demolition and wrecking; roofing tender; underpinning, lagging, bracing, shoring; jack man on slip form; vibrator; landscaping; bituminous worker; asbestos removal laborer; hazardous waste worker; hydro-blaster;

GROUP 2: Buffing machine operator; raker; luteman

GROUP 3: Cement manhole builder; plaster laborer; steel burners; steel form setter; jack hammer; air tools

GROUP 4: Miners tunnels; underground sewers; drilling, blasting and all compressed air work underground or in compression

chambers
GROUP 5: Dynamite person

LABO1440B 06/01/2000

	Rates	Fringes
GREEN, JEFFERSON (Southern part), LAFAYETTE, AND ROCK COUNTIES		
LABORERS:		
GROUP 1	18.42	6.01

LABORERS CLASSIFICATIONS
GROUP 1: General Laborer, Flagman Power Rammer; Jumping jack; Vibrator Operator; Fork Lift Operator; Concrete Pump Lead Hose Man; Mortar and Plaster Mixer; Air Hammer

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PAIN0106H 05/01/2000

	Rates	Fringes
ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES		
PAINTERS:		
REPAINT:		
Brush, Roller	20.68	7.08
Spray, Sandblast, Steel	21.28	7.08
NEW:		
Brush, Roller	22.18	7.08
Spray, Sandblast, Steel	22.78	7.08

PAIN0108B 06/01/2000

	Rates	Fringes
RACINE COUNTY		
PAINTERS:		
Brush, Roller	20.50	7.40
Spray & Sandblast	21.50	7.40

PAIN0145D 06/01/1999

	Rates	Fringes
CALUMET, FOND DU LAC, GREEN LAKE, MANITOWOC, MARQUETTE, OUTAGAMIE, SHAWANO (West of Shawano), SHEBOYGAN, WAUSHARA, WAUPACA, AND WINNEBAGO COUNTIES		
PAINTERS:		
Brush	16.21	3.01
Spray	16.71	3.01

PAIN0259B 06/01/2000

	Rates	Fringes
BARRON, BUFFALO, CHIPPEWA, CRAWFORD, DUNN, EAU CLAIRE, JACKSON, LA CROSSE, MONROE, PEPIN, PIERCE, POLK, RUSK, ST CROIX, SAWYER, TREMPEALEAU, VERNON, AND WASHBURN COUNTIES		
PAINTERS:		
Brush	18.40	2.30+5%
Spray, Sandblasting, and work more than 50 ft above ground	19.15	2.30+5%

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* PAIN0337A 06/01/2000

	Rates	Fringes
BROWN, DOOR, KEWAUNEE, OCONTO, AND SHAWANO (East of the Town of Shawano) COUNTIES		
PAINTERS:		
Brush	17.95	4.35
Spray & Industrial	18.33	4.35

PAIN0781B 06/01/2000

	Rates	Fringes
JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES		

PAINTERS:
Brush 22.64 7.37
Spray & Sandblast 23.39 7.37
Bridge 22.99 7.37

PAIN0802B 06/01/2000

Rates Fringes

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES
PAINTERS:
Brush 20.70 5.87
Structural Steel, Spray 21.70 5.87

PAIN0832B 06/01/2000

Rates Fringes

ADAMS, CLARK, FOREST, IRON, JUNEAU, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, WOOD, AND VILAS COUNTIES
PAINTERS 20.20 4.06

PAIN0934A 06/01/2000

Rates Fringes

KENOSHA AND WALWORTH COUNTIES
PAINTERS:
Brush 20.88 6.56
Structural Steel 21.03 6.56
Spray 21.63 6.56

PAIN1011C 06/01/2000

Rates Fringes

FLORENCE COUNTY
PAINTERS 19.10 3.55

PLUM0011C 05/01/2000

Rates Fringes

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, SAWYER, AND WASHBURN COUNTIES
PLUMBERS 24.40 9.65

PLUM0075B 06/01/2000

Rates Fringes

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

PLUMBERS 27.51 6.79

PLUM0075D 06/01/2000

Rates Fringes

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, AND ROCK COUNTIES

PLUMBERS & PIPEFITTERS 27.76 6.79

PLUM0075I 06/01/2000

Rates Fringes

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

PLUMBERS 27.51 6.79

PLUM0118B 06/01/2000

	Rates	Fringes
KENOSHA, RACINE, AND WALWORTH COUNTIES		
PLUMBERS AND STEAMFITTERS	26.11	8.81

PLUM0400C 06/01/2000

	Rates	Fringes
ADAMS,BROWN, CALUMET, DODGE (except Watertown), DOOR, FOND DU LAC, GREEN LAKE,KEWAUNEE, MANITOWOC, MARINETTE (except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, SHEBOYGAN, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES		
PLUMBERS & PIPEFITTERS	24.75	7.66

PLUM0434B 06/01/2000

	Rates	Fringes
BARON, BUFFALO, CHIPPEWA, CLARK, CRAWFORD, DUNN, EAU CLAIRE, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LA CROSSE, LANGLADE, LINCOLN, MARATHON, MONROE, ONEIDA, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RUSK, ST. CROIX, TAYLOR, TREMPEALEAU, VERNON, VILAS, AND WOOD COUNTIES		
PLUMBERS & PIPEFITTERS	24.50	7.98

PLUM0506G 06/01/2000

	Rates	Fringes
MARINETTE COUNTY (Niagara only)		
PLUMBERS & PIPEFITTERS:		
Jobs where plumbing bid is $50,000 or less	17.48	10.00
All other work	24.03	10.00

TEAM0039B 05/01/2000

	Rates	Fringes
TRUCK DRIVERS:		
2 Axle Trucks	17.83	8.03
3 or more axles; Euclids or Dumptor	17.98	8.03

WELL DRILLERS	16.52	3.70

SELF-PROPELLED HOPPER DREDGES:		
DRAG TENDER	8.78	4.23+A

FOOTNOTE FOR DRAG TENDERS:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Paul Hall's Birthday (August 20), Veteran's Day, Thanksgiving Day, and Christmas Day

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

PAINT ANALYSIS - LEAD AND CHROMIUM - L/D'S 4 - 10

SITE/LOCATION	ELEMENT	CONCENTRATION
UNDERCARRIAGE/I-BEAM		
L/D 5A I-Beam (Lab ID 15)	Cr	240 ppm
	Pb	44,000 ppm
Undercarriage (Lab ID 16)	Cr	2,300 ppm
	Pb	17,000 ppm
L/D 6 I-Beam (Upstream) (Lab ID 22)	Cr	260 ppm
	Pb	13,000 ppm
I-Beam (Downstream) (Lab ID 23)	Cr	260 ppm
	Pb	52,000 ppm
Undercarriage (Lab ID 24)	Cr	220 ppm
	Pb	28,000 ppm
L/D 8 Undercarriage (Lab ID 10)	Cr	1,000 ppm
	Pb	19,000 ppm
L/D 9 Undercarriage (Lab ID 17)	Cr	2,000 ppm
	Pb	920 ppm
Undercarriage (2) (Lab ID 18)	Cr	1,500 ppm
	Pb	510 ppm
Under Undercarriage (Lab ID 19)	Cr	64 ppm
	Pb	720 ppm

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LABORATORY ANALYSIS REPORT

DATE: January 5, 2000

PAGE: 1 Of 6

CLIENT: US Army Corp Of Engineers
190 E. 5th St.
St. Paul, MN 55101

CONTACT: Richard Beatty

PROJECT NO.: 122199-200390
COLLECTION DATE: 11/15-17/99
COLLECTED BY: Client
RECEIVED DATE: 12/21/99

Sample No.: 29688-1
Sample ID.: 4A-Bulkheads R

ANALYSIS	UNITS	POL	RESULT	ANALYSIS DATE
Chromium (6010B)	mg/kg	8.3	89	1/03/00
Lead (6010B)	mg/kg	33	120	1/03/00

Sample No.: 29688-2
Sample ID.: 4B-Roller #1

ANALYSIS	UNITS	POL	RESULT	ANALYSIS DATE
Chromium (6010B)	mg/kg	11	62	1/03/00
Lead (6010B)	mg/kg	43	83	1/03/00

Sample No.: 29688-3
Sample ID.: 4C-Tainter #13

ANALYSIS	UNITS	POL	RESULT	ANALYSIS DATE
Chromium (6010B)	mg/kg	11	44	1/03/00
Lead (6010B)	mg/kg	45	140	1/03/00

Sample No.: 29688-4
Sample ID.: 4D-Bulkheads T

ANALYSIS	UNITS	POL	RESULT	ANALYSIS DATE
Chromium (6010B)	mg/kg	12	220	1/03/00
Lead (6010B)	mg/kg	47	670	1/03/00

Sample No.: 29688-5
Sample ID.: 5A-Tainter G

ANALYSIS	UNITS	POL	RESULT	ANALYSIS DATE
Chromium (6010B)	mg/kg	8.5	39	1/03/00
Lead (6010B)	mg/kg	34	270	1/03/00

ND means Not Detected or below reported PQL
PQL means Practical Quantification Limit
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE:	*January 5, 2000*	*PAGE:*	*2 Of 6*
CLIENT:	*US Army Corp Of Engineers*	*PROJECT NO.:*	*122199-200390*
	190 E. 5th St.	*COLLECTION DATE:*	*11/15-17/99*
	St. Paul, MN 55101	*COLLECTED BY:*	*Client*
		RECEIVED DATE:	*12/21/99*
CONTACT:	*Richard Beatty*		

		Sample No.:	*29688-6*	
		Sample ID.:	*5B-Bulkheads R*	
ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*11*	*95*	*1/03/00*
Lead (6010B)	*mg/kg*	*42*	*270*	*1/03/00*

		Sample No.:	*29688-7*	
		Sample ID.:	*5C-P. Gate*	*ANALYSIS*
ANALYSIS	*UNITS*	*POL*	*RESULT*	*DATE*
Chromium (6010B)	*mg/kg*	*8.3*	*46*	*1/03/00*
Lead (6010B)	*mg/kg*	*660*	*210,000*	*1/03/00*

		Sample No.:	*29688-8*	
		Sample ID.:	*6A-Roller G*	*ANALYSIS*
ANALYSIS	*UNITS*	*POL*	*RESULT*	*DATE*
Chromium (6010B)	*mg/kg*	*5.9*	*180*	*1/03/00*
Lead (6010B)	*mg/kg*	*24*	*100*	*1/03/00*

		Sample No.:	*29688-9*	
		Sample ID.:	*6B-Tainter G*	*ANALYSIS*
ANALYSIS	*UNITS*	*POL*	*RESULT*	*DATE*
Chromium (6010B)	*mg/kg*	*10*	*110*	*1/03/00*
Lead (6010B)	*mg/kg*	*40*	*300*	*1/03/00*

		Sample No.:	*29688-10*	
		Sample ID.:	*8A-Undercarr*	*ANALYSIS*
ANALYSIS	*UNITS*	*POL*	*RESULT*	*DATE*
Chromium (6010B)	*mg/kg*	*11*	*1100*	*1/03/00*
Lead (6010B)	*mg/kg*	*44*	*19,000*	*1/03/00*

		Sample No.:	*29688-11*	
		Sample ID.:	*5A-A Roller G*	
ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*5.8*	*65*	*1/03/00*
Lead (6010B)	*mg/kg*	*23*	*140*	*1/03/00*

ND means Not Detected or below reported PQL
PQL means Practical Quantification Limit
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

DATE:	*January 5, 2000*	*PAGE:*	*3 Of 6*
CLIENT:	*US Army Corp Of Engineers* *190 E. 5th St.* *St. Paul, MN 55101*	*PROJECT NO.:* *COLLECTION DATE:* *COLLECTED BY:* *RECEIVED DATE:*	*122199-200390* *11/15-17/99* *Client* *12/21/99*
CONTACT:	*Richard Beatty*		

			Sample No.:	29688-12	
			Sample ID.:	5B-Tainter G	ANALYSIS
ANALYSIS	UNITS		POL	RESULT	DATE
Chromium (6010B)	mg/kg		7.5	23	1/03/00
Lead (6010B)	mg/kg		30	100	1/03/00

			Sample No.:	29688-13	
			Sample ID.:	5A-C Bulkheads R	
					ANALYSIS
ANALYSIS	UNITS		POL	RESULT	DATE
Chromium (6010B)	mg/kg		12	43	1/03/00
Lead (6010B)	mg/kg		950	250,000	1/03/00

			Sample No.:	29688-14	
			Sample ID.:	5A-D Bulkheads T	
					ANALYSIS
ANALYSIS	UNITS		POL	RESULT	DATE
Chromium (6010B)	mg/kg		10	45	1/03/00
Lead (6010B)	mg/kg		41	200	1/03/00

			Sample No.:	29688-15	
			Sample ID.:	5A-E I Beam	ANALYSIS
ANALYSIS	UNITS		POL	RESULT	DATE
Chromium (6010B)	mg/kg		9.3	240	1/03/00
Lead (6010B)	mg/kg		370	44,000	1/03/00

			Sample No.:	29688-16	
			Sample ID.:	5A-F Car Under	
					ANALYSIS
ANALYSIS	UNITS		POL	RESULT	DATE
Chromium (6010B)	mg/kg		11	2300	1/03/00
Lead (6010B)	mg/kg		42	17,000	1/03/00

ND means Not Detected or below reported PQL
PQL means Practical Quantification Limit
mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

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CLIENT:	*US Army Corp Of Engineers* *190 E. 5th St.* *St. Paul, MN 55101*	*PROJECT NO.:* *COLLECTION DATE:* *COLLECTED BY:* *RECEIVED DATE:*	*122199-200390* *11/15-17/99* *Client* *12/21/99*
CONTACT:	*Richard Beatty*		

Sample No.: ***29688-17***
Sample ID.: ***9A-Undercarr***

ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*11*	*2000*	*1/03/00*
Lead (6010B)	*mg/kg*	*43*	*920*	*1/03/00*

Sample No.: ***29688-18***
Sample ID.: ***9B-Undercarr***

ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*9.4*	*1500*	*1/03/00*
Lead (6010B)	*mg/kg*	*38*	*510*	*1/03/00*

Sample No.: ***29688-19***
Sample ID.: ***9C-Under-Undercarr***

ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*12*	*64*	*1/03/00*
Lead (6010B)	*mg/kg*	*48*	*720*	*1/03/00*

Sample No.: ***29688-20***
Sample ID.: ***6C-Bulkheads R***

ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*11*	*94*	*1/03/00*
Lead (6010B)	*mg/kg*	*44*	*160*	*1/03/00*

Sample No.: ***29688-21***
Sample ID.: ***6D-Bulkheads T***

ANALYSIS	*UNITS*	*POL*	*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*11*	*97*	*1/03/00*
Lead (6010B)	*mg/kg*	*42*	*350*	*1/03/00*

ND means Not Detected or below reported PQL
***PQL** means Practical Quantification Limit*
***mg/kg** means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)*

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	190 E. 5th St.	*COLLECTION DATE:*	*11/15-17/99*
	St. Paul, MN 55101	*COLLECTED BY:*	*Client*
		RECEIVED DATE:	*12/21/99*
CONTACT:	*Richard Beatty*		

			Sample No.:	*29688-22*	
			Sample ID.:	*6E-I Beam Upstream*	
ANALYSIS	*UNITS*	*POL*		*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*10*		*260*	*1/03/00*
Lead (6010B)	*mg/kg*	*41*		*13,000*	*1/03/00*

			Sample No.:	*29688-23*	
			Sample ID.:	*6F-I Beam Downstream*	
ANALYSIS	*UNITS*	*POL*		*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*9.9*		*260*	*1/03/00*
Lead (6010B)	*mg/kg*	*390*		*52,000*	*1/03/00*

			Sample No.:	*29688-24*	
			Sample ID.:	*6G-Undercarr*	
ANALYSIS	*UNITS*	*POL*		*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*6.1*		*220*	*1/03/00*
Lead (6010B)	*mg/kg*	*250*		*28,000*	*1/03/00*

			Sample No.:	*29688-25*	
			Sample ID.:	*10A-Bulkheads R*	
ANALYSIS	*UNITS*	*POL*		*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*8.9*		*150*	*1/03/00*
Lead (6010B)	*mg/kg*	*35*		*2400*	*1/03/00*

			Sample No.:	*29688-26*	
			Sample ID.:	*10B-Bulkheads T*	
ANALYSIS	*UNITS*	*POL*		*RESULT*	*ANALYSIS DATE*
Chromium (6010B)	*mg/kg*	*8.8*		*120*	*1/03/00*
Lead (6010B)	*mg/kg*	*35*		*360*	*1/03/00*

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mg/kg means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)

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LABORATORY ANALYSIS REPORT

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CLIENT:	*US Army Corp Of Engineers* *190 E. 5th St.* *St. Paul, MN 55101*	***PROJECT NO.:*** ***COLLECTION DATE:*** ***COLLECTED BY:*** ***RECEIVED DATE:***	*122199-200390* *11/15-17/99* *Client* *12/21/99*
CONTACT:	*Richard Beatty*		

			Sample No.:	*29688-27*	
			Sample ID.:	*10C-Rollergate G (#4)*	
ANALYSIS	***UNITS***	***POL***		***RESULT***	***ANALYSIS DATE***
Chromium (6010B)	*mg/kg*	*6.8*		*190*	*1/03/00*
Lead (6010B)	*mg/kg*	*27*		*79*	*1/03/00*

			Sample No.:	*29688-28*	
			Sample ID.:	*10D-Tainter G (#9)*	
ANALYSIS	***UNITS***	***POL***		***RESULT***	***ANALYSIS DATE***
Chromium (6010B)	*mg/kg*	*10*		*130*	*1/03/00*
Lead (6010B)	*mg/kg*	*42*		*98*	*1/03/00*

ND means Not Detected or below reported PQL
PQL *means Practical Quantification Limit*
mg/kg *means Milligrams Per Kilogram which is equivalent to Parts Per Million (ppm)*

This report has been reviewed by me for technical accuracy and completeness. The analyses were performed using EPA or other approved methodologies and the results were reported on an "as received" basis unless otherwise noted. 0The results reported relate only to the items tested. Please contact me if you have any questions or comments regarding this report. Spectrum Labs, Inc. appreciates the opportunity to provide this analytical service for you.

Report Submitted By,

Gerard Herro
Laboratory Manager

GJH:wmc
coe005-1

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01000

GENERAL

-- End of Section Table of Contents --

SECTION 01000

GENERAL

PART 1 GENERAL

1.1 ORGANIZATION OF TECHNICAL SPECIFICATION SECTIONS

The technical requirements specification sections which govern the materials and equipment to be furnished and the work to be performed under this contract are listed in the Table of Contents. No attempt has been made in the sections to segregate work to be performed by any trade, craft, or subcontractor. Any segregation between the trades or crafts shall be solely a matter for agreement between the Contractor, Contractor's employees, and subcontractors.

1.2 REFERENCE TECHNICAL REQUIREMENTSS

Reference to the standards, specifications, or codes of any technical society, organization, or association, or local, state, or Federal authority shall mean the specific edition or revision listed.

1.3 SUBMITTALS (NOT USED)

1.4 MEASUREMENT AND PAYMENT

The work of this section will not be measured for separate payment and costs therefor shall be included in the contract price for the feature to which the work pertains.

PART 2 PRODUCTS

2.1 APPROVAL OF MATERIALS OR ALTERNATES

Requests for approval of materials and products, or substitutes thereof, will not be considered prior to the date of award of the contract.

2.2 WARRANTIES.

Each item that is submitted for review or approval of the Contracting Officer shall include a copy of the manufacturer's standard warranty if applicable.

PART 3 EXECUTION

3.1 GROUNDS AND ROADWAYS

3.1.1 Availability of Grounds

Subject to prior approval, the following areas will be available for the Contractor's use during the contract period:

(A) Service Bridge. Subject to prior approval, the Contractor may utilize the existing service bridge structures as a means of gaining

access to the top of the service bridge spans provided the Contractor meets all required and applicable safety requirements.

(B) Auxiliary Lock Chamber. The lower portion of the auxiliary lock chamber may be utilized during contract project work activities and operations for storage of floating plant and associated equipment, materials and supplies. The upper portion of the auxiliary lock chamber will not be allowed to be utilized by the Contractor.

(C) Loading Dock. Subject to availability, any existing loading dock at or near the contract project site will be made available for the Contractor's temporary use. The Contractor shall not block access to the loading dock for extended periods of time as determined by the Contracting Officer.

(D) Storage Yard. The Contractor may use the existing storage yard, as applicable, for storage of equipment and supplies at the Contractor's own risk.

3.1.2 Access to Lock and Dam Facilities

3.1.2.1 General

Depending on the specific contract project work site location, access to a work area may be gained either by land through the lock and dam existing facilities (after first checking with the on-duty Government lockmaster), and/or by water via Contractor's floating plant (if utilized). Should the Contractor choose to access a specific contract project work site by floating plant, and subject to prior approval, approach to the lock and dam structure may be restricted to access from either the downstream side, the upstream side, or from both the downstream and the upstream sides within the existing operational limits/areas posted for the specific lock and dam site. Approaching the lock and dam structure from either the downstream side and from the upstream side is further restricted in that it will only be allowed when conditions are determined safe and acceptable to the Contracting Officer. The Contractor shall not approach a lock and dam site from either the downstream side or upstream side without prior approval from the Contracting Officer.

3.1.2.2 Land access

(A) Lock and Dam No. 5, 5A, 6, 7, & 10. Limited direct land access is available as indicated.

(B) Dam No. 6, 7, & 10. No land access is available to the existing storage yards.

3.1.2.3 Maximum Gate Closures.

The maximum number of gates that may be rendered inoperable (meaning that they are incapable of regulating flow through their original design range) at any time varies with the time of year and with the river flow conditions. Roller gates and/or tainter gates shall not be rendered inoperable at the same time. The Contractor shall be responsible for rendering gates operable within 24 hours from the time conditions first warrant a decrease in the maximum number of inoperable gates. The following tables indicate the maximum number of gates that may be rendered inoperable during various flow conditions at each dam:

MAXIMUM GATE CLOSURES AT DAM NO. 5

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Roller Gates That May Be Inoperable
Below 15,000	6
15,000 - 30,000	5
30,000 - 45,000	4
45,000 - 60,000	3
60,000 - 75,000	2
75,000 - 90,000	1
Over 90,000	0

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Tainter Gates That May Be Inoperable
Below - 15,000	28
15,000 - 18,000	27
18,000 - 20,000	26
20,000 - 22,000	25
22,000 - 24,000	24
24,000 - 26,000	23
26,000 - 30,000	22
30,000 - 34,000	21
34,000 - 36,000	20
36,000 - 40,000	19
40,000 - 44,000	18
44,000 - 46,000	17
46,000 - 48,000	16
48,000 - 54,000	15
54,000 - 56,000	14
56,000 - 60,000	13
60,000 - 64,000	12
64,000 - 66,000	11
66,000 - 74,000	10
74,000 - 78,000	9
78,000 - 82,000	8
82,000 - 86,000	7
86,000 - 90,000	6
90,000 - 95,000	5
95,000 - 100,000	4
100,000 - 105,000	3
105,000 - 110,000	2
110,000 - 115,000	1
Over - 115,000	0

NOTES FOR DAM NO. 5:

(1) All river flows are measured in cubic feet per second at the lock and dam by Corps of Engineers personnel.

(2) All gates should be raised clear of the river water surface when the river flow discharge reaches 115,000 cubic feet per second and the head at the dam is below 1 foot.

MAXIMUM GATE CLOSURES AT DAM NO. 5A

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Roller Gates That May Be Inoperable
Below 8,000	5
8,000 - 16,000	4
16,000 - 24,000	3
24,000 - 34,000	2
34,000 - 50,000	1
Over 50,000	0

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Tainter Gates That May Be Inoperable
Below - 34,000	5
34,000 - 44,000	4
44,000 - 50,000	3
50,000 - 53,000	2
53,000 - 56,000	1
Over - 56,000	0

NOTES FOR DAM NO. 5A:

(1) All river flows are measured in cubic feet per second at the lock and dam by Corps of Engineers personnel.

(2) All gates should be raised clear of the river water surface when the river flow discharge reaches 56,000 cubic feet per second and the head at the dam is below 1 foot.

MAXIMUM GATE CLOSURES AT DAM NO. 6

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Roller Gates That May Be Inoperable
Below 20,000	5
20,000 - 25,000	4
25,000 - 35,000	3
35,000 - 50,000	2
50,000 - 65,000	1
Over 65,000	0

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Tainter Gates That May Be Inoperable
Below - 40,000	10
40,000 - 45,000	9
45,000 - 50,000	8
50,000 - 55,000	7
55,000 - 60,000	6
60,000 - 65,000	5
65,000 - 68,000	4
68,000 - 70,000	3
70,000 - 72,000	2
72,000 - 74,000	1
Over - 74,000	0

NOTES FOR DAM NO. 6:

(1) All river flows are measured in cubic feet per second at the lock and dam by Corps of Engineers personnel.

(2) All gates should be raised clear of the river water surface when the river flow discharge reaches 56,000 cubic feet per second and the head at the dam is below 1 foot.

MAXIMUM GATE CLOSURES AT DAM NO. 7

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Roller Gates That May Be Inoperable
Below 20,000	5
20,000 - 26,000	4
26,000 - 38,000	3
38,000 - 50,000	2
50,000 - 65,000	1
Over 65,000	0

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Tainter Gates That May Be Inoperable
Below - 35,000	11
35,000 - 42,000	10
42,000 - 46,000	9
46,000 - 52,000	8
52,000 - 58,000	7
58,000 - 64,000	6
64,000 - 70,000	5

NOTES FOR DAM NO. 7:

(1) All river flows are measured in cubic feet per second at the lock and dam by Corps of Engineers personnel.

(2) No tainter gates should be closed when river flows exceed 70,000 cubic feet per second due to flow velocities exceeding 6.0 feet per second.

(3) River flows must be within the limiting flow range on the first day of the period with U.S. National Weather Service and Corps of Engineers river forecasts indicating that flow values during the subsequent 10 day period will remain below the upper end of the limiting flow range.

MAXIMUM GATE CLOSURES AT DAM NO. 10

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Roller Gates That May Be Inoperable
Below - 22,000	4
22,000 - 30,000	3
30,000 - 40,000	2
40,000 - 50,000	1
Over - 50,000	0

River Flow In Cubic Feet Per Second (CFS)	Maximum Number of Tainter Gates That May Be Inoperable
Below - 30,000	8
30,000 - 35,000	7
35,000 - 40,000	6
40,000 - 45,000	5
45,000 - 50,000	4
50,000 - 55,000	3
55,000 - 60,000	2
60,000 - 65,000	1
Over - 65,000	0

NOTES FOR DAM NO. 10:

(1) All river flows are measured in cubic feet per second at the lock and dam by Corps of Engineers personnel.

(2) River flows must be within the limiting flow range on the first day of the period with U.S. National Weather Service and Corps of Engineers river forecasts indicating that flow values during the subsequent 10 day period will remain below the upper end of the limiting flow range.

3.2 DISPOSAL OF DEBRIS AND WASTE

The Contractor's attention is directed to Section 01410 ENVIRONMENT PROTECTION and to the following CONTRACT CLAUSES: PERMITS AND RESPONSIBILITIES; PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, EQUIPMENT, AND IMPROVEMENTS; OPERATIONS AND STORAGE AREAS; and CLEANING UP. Burning will not be permitted at the each contract project work site and debris or waste shall not be left on the site.

3.3 EXISTING UTILITIES

3.3.1 General

The Contractor shall coordinate all utility relocation requirements with the Contracting Officer. This includes temporary suspension or relocation of electrical conduits during surface preparation and metallizing and painting of affected existing service bridge component surfaces.

3.4 SCHEDULING

3.4.1 General

It shall be the responsibility of the Contractor to schedule and execute the contract project work, incorporating the necessary requirements set forth in the contract documents. The Contractor shall develop and submit a

schedule in accordance with SPECIAL CONTRACT REQUIREMENTS: SCHEDULES FOR CONSTRUCTION CONTRACTS.

3.4.2 Notification

The Contractor shall inform the Government, in writing, within 5 calendar days after receipt of Notice to Proceed and before work begins as to which hours of the day and days of the week contract project construction work/activities are proposed to be performed. The Contractor shall notify the Government at least 24 hours before contract project work is to be conducted on overtime, in multiple shifts, on weekends, or on Government holidays.

3.4.3 Lock and Dam Operations

The Contractor shall not interfere with normal lock and dam operations. The Government's lock and dam personnel will not accept deliveries, telephone calls, or mail or deliver messages for the Contractor.

3.5 CONSTRUCTION RESTRICTIONS

3.5.1 Contractor Work Times and Government Scheduled Working Periods

The times (days and hours) during which the Contractor is expected to perform work under this contract are unrestricted. However, if the Contractor has a need to perform contract project work, operations, and/or activities which requires the presence of Government personnel, such as operating gates, operating machinery, moving (relocating) the dam service bridge crane, etc., such work, operations, and activities must be performed during the following scheduled Government working periods unless approved otherwise: hours 8:00 a.m. to 3:30 p.m. Monday through Friday, excluding weekends and holidays.

3.5.2 Lock and Dam Operations

During the life of this contract, the Government will be required to operate for each lock and dam site the following as part of normal operations and during emergency situations: lock chamber gates; dam service bridge crane; and dam control gates. The Contractor shall ensure at all times that its personnel, materials, equipment, supplies, etc., do not hinder such operations in any way, unless otherwise permitted or approved. The Contractor shall have an on-call arrangement established with the Government's lock and dam personnel in case of after-hours emergencies which would guarantee the presence of a Contractor crew at the contract project work site within 2 hours after receiving notice.

3.5.2.1 Lock and Dam Operations During Contract Work

Anytime the operation of the existing dam service bridge crane is limited due to the contract project work, the Contractor shall be prepared to allow the Government access in any gate/lock bay in order to allow the installation and/or removal of the existing emergency bulkheads by the Government, during an emergency condition, as determined by the Government.

3.5.3 Floating Plant Moored In/Adjacent To Dam Gate And Lock Chamber Bays

When the Contractor uses floating plant (barges, etc.), the Contractor shall tie mooring lines to the mooring rings on the dam piers only. Due to potential emergency situations which may require gate openings/closings,

launching of emergency rescue water craft, etc., the Contractor shall be prepared to remove its floating plant from the dam gate bays and/or the auxiliary lock chamber at all times for the duration of this contract. The Contractor will not be permitted to moor any floating plant in the main lock chamber bay.

3.5.4 Personal Fall Protection Devices and Safety Nets and Debris Nets

Unless directed otherwise, at all times during the Contractor's contract construction operations and activities at the contract project work site the Contractor shall comply with the safety requirements pertaining to personal fall protection devices and safety nets and debris nets in accordance with CONTRACT CLAUSES: ACCIDENT PROVENTION.

3.5.5 Load Restrictions for Existing Structures

(A) Lock Walls. The Contractor shall adhere to the following weight limitations in the areas of the existing lockwalls: maximum 40 tons within 50 feet of a lock chamber face of a lockwall; and maximum 150 tons at 50 feet and beyond from a lock chamber face of a lockwall.

(B) Electrical Trenches. All wheel loads shall require temporary bridging over the existing electrical trenches. The Contractor shall provide temporary bridging that spans the existing electrical trenches such that no additional load can be imposed on the electrical trench components. The Contractor's installed temporary bridging shall be removed from the contract project work site upon completion of the required contract project construction work.

(C) Protection from Damage of Existing Grating. Protection shall cover all existing grating, including grating support systems, that is not required to be replaced under this contract. The Contractor shall provide temporary protection for the existing grating that the Contractor has to utilize in order to complete the required contract project construction work. This protection does not relieve the Contractor of the responsibility for limiting loads on the lock miter gates and the dam service bridge in order to prevent damage to the grating walkway support system. The Contractor's installed temporary bridging shall be removed from the contract project work site upon completion of the required contract project construction work.

(D) Existing Lock Miter Gates, Lock Walls, Dam Service Bridge, and Dam Service Bridge Accessways. The Contractor shall not transport any loads over the existing lock miter gates, lock walls, dam service bridge, and dam service bridge accessways that could damage the existing grating and/or its support systems. The following requirements shall apply to the Contractor's transporting of materials, supplies, refuse, etc., over the existing lock miter gates, lock walls, dam service bridge, and dam service bridge accessways:

(1) Maximum loading (gross weight) shall not exceed 5,000 pounds with a maximum wheel load of 1,500 pounds.

(2) All existing grating shall be covered by the Contractor with 3/4 inch thick (nominal) exterior grade plywood.

(3) Each existing lock miter gate leaf should be able to handle the required maximum loading except at the cantilevered portion at the miter end area and the grating extension at the quoin end area.

The Contractor shall design temporary bridging to take the maximum loading at these locations.

(E) Dam No. 5 Service Bridge Restriction Dam on Service Bridge Crane Operation. The dam No. 5 service bridge crane is limited to 50 percent (maximum) of its rated capacity if the crane wheel loads are located on a service bridge pier span between roller gates. The dam No. 5 service bridge crane is also limited to 75 percent (maximum) of its rated capacity when operating on a tainter gate span of the service bridge when its tainter gate is open. The above restrictions apply whether the dam No. 5 service bridge crane is mounted on the existing or the new undercarriage.

3.5.6 Pickup, Transport, Unloading of Government Furnished Items

The Contractor shall pickup, transport, and unload required Government-furnished items from an off-site Government storage site to the applicable contract project work site.

3.5.7 Existing Fencing Restoration Work

In all areas, whether within or outside the contract project work limits, where existing fencing is cut, removed, and/or otherwise damaged resulting from the Contractor's operations/activities damaged (as determined by the Contracting officer), such damaged fencing shall be removed by the Contractor from the contract project work site and then replaced by the Contractor with new fencing equal to or better than the pre-construction existing fencing, as approved. Unless approved otherwise, fencing restoration work shall be completed no later than one calendar day after any such damaged has been determined by the Contracting Officer. When weather conditions preclude completion of the required fencing restoration work, a temporary fencing utilizing an approved type of fencing shall be installed, and the final restoration work shall be completed as soon as conditions allow as determined by the Contracting Officer. The fencing restoration work shall be performed by the Contractor at no additional cost to the Government.

3.5.8 Hazardous Materials

Prior to commencing project contract construction activities/operations at each contract project work site, the Contractor shall identify (including name(s), quantity(ies), location(s)) all hazardous existing/new materials (fuel, oil, grease, coatings, paint coatings, etc.), for each contract project work site, that is to be furnished, utilized, handled, stored, and/or disposed of by the Contractor in the performance/completion of the required project contract work. Such information shall be made available to the Contracting Officer when so requested by the Contracting Officer.

3.6 WORK PERFORMED BY OTHERS

3.6.1 General

The Contractor shall coordinate with others, including other contractors, in the performance of the contract project work and schedule such work in order to provide for a minimum of delays and interferences. Coordination shall be through the Contracting Officer.

3.6.2 Work Performed by Others

Work listed below is currently under separate contract or is scheduled to be awarded as a separate contract prior to completion of work under this contract. Each such contract will be considered in the application of CONTRACT CLAUSES: OTHER CONTRACTS.

(A) Lock and Dam No. 5A

(1) Crane rail rehabilitation including metallizing/painting items on the dam service bridge spans and other related work.

(2) Use of existing loading dock by others.

(B) Lock and Dam No. 6

(1) Crane rail rehabilitation construction contract including metallizing/painting items on the dam service bridge spans and other related work.

(2) Use of existing loading dock by others.

(C) Lock and Dam No. 7

(1) Stage 2 construction contract including construction of the central control station, rehabilitation of the lock, and reroofing of the dam pierhouses.

(2) The Stage 2 construction contract provides use of the service bridge crane to the Stage 2 contractor for work related to reroofing of the dam pierhouses. In order to avoid interference with this reroofing work, the dam crane undercarriage installation work at Lock and Dam No. 7 shall not begin prior to 01 August 2001 without written approval of the Contracting Officer.

(3) Use of existing loading dock by others.

(D) Lock and Dam No. 10

(1) Painting construction contract of the dam service bridge and other related work; a notice to proceed for this contract work is currently scheduled to occur around 01 November 2001.

3.7 SHORING (NOT USED)

3.8 DEWATERING OPERATIONS (NOT USED)

3.9 FLOATING PLANT

3.9.1 Equipment and Personnel

Floating plant and personnel shall comply with the applicable U.S. Coast Guard regulations and licensing requirements. Floating plant equipment shall meet the applicable requirements of 46 CFR Chapter 1 Subchapter E and 46 CFR 44.05-10.

3.9.2 Navigable Waters

Floating vessels operating on the Mississippi River and it's tributaries

must be operated in accordance with 33 CFR 207.3, "Ohio River, Mississippi River above Cairo, Ill., and their tributaries; use, administration, and navigation."

3.10 SEWAGE AND BILGE WATER DISPOSAL

The Contractor's methods for disposal of sanitary sewage, and bilge water accumulated aboard floating plant equipment, shall meet applicable local, state, and federal requirements.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01330

SUBMITTAL PROCEDURES

-- End of Section Table of Contents --

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows:

SD-01 Data

SD-04 Drawings

SD-06 Instructions

SD-07 Schedules

SD-08 Statements

SD-09 Reports

SD-13 Certificates

SD-14 Samples

SD-18 Records

SD-19 Operation and Maintenance Manuals

1.2 SUBMITTAL DESCRIPTIONS

1.2.1 SD-01 Data

Description: Data which covers calculations, descriptions, and/or documentation regarding the contract project work such as: manufacturer's catalog data, manufacturer's standard color charts, and design data.

1.2.2 SD-04 Drawings

Description: Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the contract project work.

1.2.3 SD-06 Instructions

Description: Preprinted (printed) material describing installation of products, systems, and/or materials, including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

1.2.4 SD-07 Schedules

Description: Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, and/or components

proposed or approved to be to be used in the contract project work.

1.2.5 SD-08 Statements

Description: Document(s), required of the Contractor or through the Contractor, from a supplier, installer, manufacturer, or other lower tier contractor (subcontractor), the purpose of which is to confirm the quality and/or orderly progression of a portion of the contract project work by documenting: procedures; acceptability of methods, personnel, and/or qualifications; and other verifications of quality.

1.2.6 SD-09 Reports

Description: Reports of inspections and/or testing, including analysis and interpretation of test results. Each report shall be properly identified. Testing methods used shall be identified and testing results shall be recorded. Reports include: test reports, factory test reports, and field test reports.

1.2.7 SD-13 Certificates

Description: Certified statement(s) signed by an official authorized to certify on behalf of the manufacturer of a product, system, and/or material, attesting that the product, system, and/or material meets contract requirements. Each statement must: be dated after the award of the contract; state the manufacturer's name and address; state the Contractor's name and address; state the contract project name, contract number, and project work location; and list the specific requirements being certified.

1.2.8 SD-14 Samples

Description: Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work. Samples include: color selection samples, sample panels, and sample installation.

1.2.9 SD-18 Records

Description: Documentation to record compliance with technical and/or non-technical (administrative, etc.) requirements.

1.2.10 SD-19 Operation and Maintenance Manuals

Description: Information that are(is) data which forms a complete, or part of an, operation and maintenance manual. Operation and maintenance manuals are considered deliverables under the contract requirements and not submittals; however, when necessary to review information to be included in the final manuals such information shall be considered an instruction submittal.

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approval

Governmental approval is required for: extensions of design; critical materials, deviations, equipment whose compatibility with the entire system

must be checked; and other items as designated by the Contracting Officer. Within the terms of the CONTRACT CLAUSES: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, such items are considered to be "shop drawings."

1.3.2 Information Only

All submittals not requiring Government approval will be for information only. Such items are not considered to be "shop drawings" within the terms of the contract clause referenced above.

1.4 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing, and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any/each error which may exist, as the Contractor under the Contractor's quality control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all contract project work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies required for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the CONTRACT CLAUSES: CHANGES, shall be given promptly to the Contracting Officer.

1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the contract project work will not be made if required approvals have not been obtained.

1.7 MEASUREMENT AND PAYMENT

The work of this section will not be measured for payment. The Contractor shall be responsible for the work of this section, without any direct compensation being made other than the payment received for contract items.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the contract documents. The Contracting Officer may request submittals in addition to those previously listed when deemed necessary to adequately describe the contract work covered in the contract documents. Units of weights and measures used on all submittals shall be the same as those used in the original contract documents. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior

to submittal, all items shall be checked and approved by the Contractor's quality control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; operation and maintenance (O&M) manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled, transmitted, and approved prior to the Contractor's acquisition of the material and/or equipment covered thereby. Samples remaining upon completion of the contract project work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

Included at the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the contract documents; this list may not be all inclusive and additional items for submittal may have to be added to this listing by the Contractor. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" and "s" through "u" and submit the forms (hard copy) to the Contracting Officer for approval within 7 calendar days after Notice to Proceed. The Contractor shall keep the submittal register up-to-date and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing/delivery time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. The submittal register shall provide for a reasonable timely distribution of shop drawings as they are prepared (particularly within a specific discipline, i.e.: civil, structural, mechanical, electrical, etc.).

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to end of this section shall be used for submitting items for Government approval "GA" and for information only "FIO" in accordance with the instructions on the reverse side of the form. At least one copy of this form will be furnished to the Contractor when so requested by the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item being submitted. Special care shall be exercised to ensure proper listing of each technical specification paragraph and/or each technical drawing sheet number of the contract documents pertinent to the data/information submitted for each item.

3.5 SUBMITTAL PROCEDURE

3.5.1 Submittal Copies

The Contractor shall submit 6 copies of each submittal (both for Government approval "GA" and for information only "FIO") unless required otherwise. Each transmittal shall address only one submittal item. Transmittals returned for resubmission shall be resubmitted in their entirety. When approved by the Contracting Officer, routine testing reports and delivery tickets may be submitted with daily quality control reports in place of following submittal procedures under this section.

3.5.2 Schedule

Shop drawings shall be submitted with ample time to secure Government approval prior to the time the items covered thereby are to be delivered to the contract project work site. Additional time should be allowed for possible resubmittal. Materials fabricated or delivered without Government approval of the shop drawing will be subject to rejection. All submittals shall be made prior to commencement of applicable contract work, and allow adequate time for Government review acceptable to the Contracting Officer.

3.5.3 Shop Drawings

Shop drawings shall be reproductions on high quality paper with clear legible print. Drawings shall generally be bordered on all sides a minimum of one inch and trimmed to neat lines. Shop drawing quality will be subject to approval. Each shop drawing, including catalog data, shall be identified with a title block including the name of the Contractor, contract number, name and location of project, and name of the item of work or structure to which the shop drawing applies. Catalog data, including technical specifications, drawings, and full descriptive information, may be submitted as shop drawings. Catalog data must be supplemented as necessary to include all pertinent data to verify conformance to the contract documents. When catalog data includes non-applicable data, the applicable data shall be clearly identified.

3.5.4 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control its procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval "GA", the submittals will be identified as having received approval by being so stamped and dated. Five copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only "FIO" will not be returned. Approval of the Contracting Officer is not required on such "for information only" submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract documents. This does not relieve the Contractor from the obligation to furnish material conforming to the contract documents; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the contract work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the contract documents so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR
(Firm Name)
_____ Approved
_____ Approved with corrections as noted on submittal data and/or attached sheets(s).
SIGNATURE: _____
TITLE: _____
DATE: _____

3.10 CONTRACTOR RECORD DRAWINGS

The Contractor shall maintain a separate set of marked-up full-scale contract drawings indicating as-built conditions. This set of marked-up drawings shall be maintained in a current "status of completed work" condition at all times until completion of the contract project work and shall be available for review by Government personnel at all times. All variations from the original contract drawings, for whatever reason, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be so marked on the marked-up drawing(s) by the Contractor. These variations shall be shown in the same general detail utilized in the original contract drawings. Revisions shall be shown on all marked-up drawings including details related to each changed feature. These marked-up drawings shall be neatly prepared with clear legible print. Deleted items shall be marked in red coloring; and added items or changed locations shall be marked in green coloring. These marked-up drawings shall be furnished to the Contracting Officer within 30 calendar days after the required contract completion date.

3.10.1 As-Built Shop Drawings

The Contractor shall record changes to shop drawings in order to indicate the actual as-built conditions. These marked-up drawings shall show all changes and revisions made up to the time the contract project work has been completed by the Contractor and finally accepted by the Government.

-- End of Section --

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
01410

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.2	Environmental Protection Plan					X							X										

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
01451

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.2	Laboratory Quality Management					X						X											
				Manual																						
			1.2	Contractor Quality Control (CQC)					X						X											
				Plan																						

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
01500

ACTIVITY NO. a.	TRANS-MITTAL NO. b.	ITEM NO. c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.1	Site Plan		X									X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
05101

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	CONTRACTOR SCHEDULE DATES: APPROVAL NEEDED BY t.	CONTRACTOR SCHEDULE DATES: MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	CONTRACTOR ACTION: DATE w.	CONTRACTOR ACTION: SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	GOVERNMENT ACTION: DATE z.	REMARKS aa.
			1.5	Shop Drawings		X										X										
			1.4	Materials List				X							X											
			1.4	Welding Procedures for Structural					X							X										
				Steel																						
			1.4	Structural Steel Welding Repairs					X							X										
			1.4	Nondestructive Testing					X							X										
			1.4	Tests, Inspections, and Verifications						X					X											
			1.6	Qualification of Welders and Welding							X				X											
				Operators																						
			1.4	Application Qualification for Steel							X					X										
				Studs																						
			1.4	As-Built Drawings									X			X										
			1.4	Materials Disposition Records									X		X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
05502

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.3	Shop Fabricated Metal Items		X										X										
			1.3	Crane Stops		X										X										
			1.3	Crane Rotation Limit Switches		X										X										
			1.3	Crane Travel Control Stations		X										X										
			1.3	Materials							X				X											

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.
01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
15000

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.5	Contractor's Lifting Equipment	X											X										
			1.5	Special Tools	X											X										
			1.5	Torque Wrenches	X											X										
			1.5	Miscellaneous Products	X											X										
			1.5	Coatings (Paints) Data	X											X										
			1.5	Colors For Repair Coating (Paint)	X											X										
			1.5	Shop Drawings		X										X										
			1.5	Installation Schedule				X								X										
			1.5	Lifting Procedures					X							X										
			1.5	Quality Control Procedures					X							X										
			1.5	Contractor's Lifting Equipment						X					X											
				Logbooks																						
			1.5	Designated Crane Operator									X			X										
			1.5	As-Built Records									X			X										

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.: 01-B-0001

TITLE AND LOCATION: **DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10**

CONTRACTOR:

SPECIFICATION SECTION: **15010**

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	CONTRACTOR SCHEDULE DATES: APPROVAL NEEDED BY t.	CONTRACTOR SCHEDULE DATES: MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	CONTRACTOR ACTION: DATE w.	CONTRACTOR ACTION: SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	GOVERNMENT ACTION: DATE z.	REMARKS aa.
			1.4	Crane Logbook	X											X										
			1.4	Testing and Inspection Equipment	X										X											
			1.4	Qualifications for Nondestructive	X										X											
				Examinations																						
			1.4	Test and Inspection Procedures			X								X											
			1.4	Hoisting and Rigging Procedures			X									X										
			1.4	Test and Inspection Reports						X					X											
			1.4	Fluids Sampling and Analysis						X						X										

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO. 01-B-0001

TITLE AND LOCATION
DAM CRANE INSTALLATION (PHASE F), L/D's 5, 5A, 6, 7, & 10

CONTRACTOR

SPECIFICATION SECTION
16416

ACTIVITY NO a.	TRANSMITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	APPROVAL NEEDED BY t.	MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	DATE w.	SUBMIT TO GOVERNMENT x.	GOVERNMENT ACTION: CODE y.	DATE z.	REMARKS aa.
			1.3	List of Equipment and Materials	X											X										
			1.3	Manufacturer's Catalogs	X										X											
			1.3	Shop Drawings		X										X										
			1.3	Contractor's Drawings		X										X										
			1.3	Manufacturer's Certified Factory Test						X					X											
				Reports																						
			1.3	Contractor's Certified Field Test						X					X											
				Reports																						
			1.3	Underwriters Laboratories Inc. (UL)							X				X											
				Publications																						
			1.3	Non-Underwriters Laboratories Inc.							X				X											
				(UL) Publications																						
			1.3	Manufacturer's Certificates of							X				X											
				Compliance																						
			1.3	Contractor's Certifications							X				X											
			1.3	Samples and Schedules								X			X											

SUBMITTAL REGISTER

(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION:

CONTRACTOR:

SPECIFICATION SECTION

ACTIVITY NO	TRANS-MITTAL NO.	ITEM NO	SPEC PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION		REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
					DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	O&M MANUALS	INFORMATION ONLY	GOVERNMENT APPROVED		SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a.	b.	c.	d.	e.	f.	g.	h.	l.	j.	k.	l.	m	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.	z.	aa.

ENG FORM 4288-R, JAN 97

EDITION OF MAR 95 IS OBSOLETE.

(Proponent: CEMP-CE)

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE:	TRANSMITTAL NO.:

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.:	CHECK ONE: **9** THIS IS A NEW TRANSMITTAL **9** THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. (*Cover only one section with each transmittal)*:	PROJECT TITLE AND LOCATION:		CHECK ONE: THIS TRANSMITTAL IS FOR **9** FIO **9** GOV'T APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type, size, model number, etc.)* *b.*	MFG. or CONTR. CAT., CURVE DRAWING or BROCHURE NO. *(See Instruction No. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACT OR USE CODE *g.*	VARIATION *(See Instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS:	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated. _____ NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.):*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY:	DATE:

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for resubmittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications -- also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" of "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column I to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings.
Refer to attached sheet, resubmission required.

D -- Will be returned by separate correspondence.

E. -- Disapproved (See attached).

F. -- Receipt acknowledged.

FX. -- Receipt acknowledged, does not comply
As noted with contract requirements.

G. -- Other *(Specify).*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01410

ENVIRONMENT PROTECTION

-- End of Section Table of Contents --

SECTION 01410

ENVIRONMENT PROTECTION

1.1 GENERAL REQUIREMENTS

The Contractor shall perform the contract project construction work (including related activities, operations, etc.) minimizing environmental pollution and damage as the result of contract project construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

1.1.1 Subcontractors

The Contractor shall insure that its subcontractors comply with the requirements of this section.

1.1.2 Definitions

For the purpose of this contract, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants.

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following items shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES.

SD-08 Statements

Environmental Protection Plan; GA.

The Environmental Protection Plan shall be prepared in accordance with Paragraph: Environmental Protection Plan.

1.3 ENVIRONMENTAL PROTECTION PLAN

1.3.1 Implementation.

Prior to ordering required materials/equipment and/or commencing contract project construction work, the Contractor shall:

(A) Submit to the Contracting Officer an acceptable written Environmental Protection Plan;

(B) Obtain the Contracting Officer's written acceptance of the Environmental Protection Plan; and

(C) Meet with representatives of the Contracting Officer for the purpose of developing an understanding of the requirements and methods of administration of the Contractor's Environmental Protection Plan.

1.3.2 Compliance.

Not withstanding the requirements of this section and not withstanding approval by the Contracting Officer of the Contractor's Environmental Protection Plan, nothing herein shall be construed as relieving the Contractor of all applicable Federal, State, and local environmental protection laws and regulations.

1.3.3 Contents.

The Contractor's Environmental Protection Plan shall include, but shall not be limited to, the following:

(A) Name(s) of person(s) within the Contractor's on-site organization who is(are) responsible for ensuring that the Environmental Protection Plan is adhered to.

(B) Meeting times and personnel attendance for communication and notification of personnel and subcontractors regarding environmental requirements, and name(s) of person(s) responsible for this training.

(C) The Contractor shall prepare a listing of resources needing protection, (i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, and historical, archaeological, and cultural resources); and what methods will be used to protect these resources.

(D) Name(s) of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

(E) Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the Environmental Protection Plan.

(F) Methods and locations for waste disposal. Licenses and/or permits shall be submitted for solid waste disposal sites that are not an operating commercial facility. Evidence of disposal facility acceptance shall be submitted for any hazardous or toxic waste.

(G) Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

(H) Environmental monitoring plans for the contract project work site(s), including land, water, air, and noise monitoring.

(I) Traffic control plans.

(J) Methods of protecting surface and ground water during construction activities.

(K) Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. The plan should include measures for marking the limits of use areas.

(L) Drawing of borrow areas.

(M) Plans for restoration of landscape damage.

1.4 PERMITS

Permits and/or licenses, as applicable, obtained by the Government related to the work of this contract are included in Section 00830 ATTACHMENTS, and/or referenced in Section 01000 GENERAL. The Contractor is responsible for obtaining all applicable permits and/or licenses (those not obtained by the Government). The Contractor shall be responsible for implementing the terms and requirements of the permits and licenses held by the Contractor and/or the Government. A copy of permits and/or licenses referenced in Section 01000 GENERAL are available for inspection in the Office of the District Engineer, Army Corps of Engineers Centre, 190 Fifth Street East, Saint Paul, Minnesota 55101.

1.5 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State, or local laws or regulations, permits, and other elements of the Contractor's Environmental Protection Plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action when approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping (suspending) all or part of the contract project work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions. Failure of the Contracting Officer to notify the Contractor of any noncompliance with Federal, State, or local laws or regulations does not relieve the Contractor of the obligation to be in conformance with those requirements.

1.6 PREVIOUSLY USED EQUIPMENT

The Contractor shall thoroughly clean all construction equipment previously used at other work sites before it is brought into the contract project work area(s), ensuring that soil residuals are removed and that seed/egg deposits from plant pests are not present; the Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

1.7 PAYMENT

No separate payment or direct payment will be made for work covered under this section and such work will be considered as a subsidiary obligation of the Contractor.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ENVIRONMENTAL RESOURCES.

The environmental resources within the contract project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire contract period. The Contractor shall confine its activities to areas defined by the contract documents.

3.2 LAND RESOURCES

Prior to the beginning of any contract project construction work, the Contractor shall identify all land resources to be preserved within the contract project work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission from the Contracting Officer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth, and other material displaced into uncleared areas shall be removed.

3.2.1 Work Area Limits

Prior to any contract project construction work, the Contractor shall mark the area(s) that do not need to be disturbed under this contract. Isolated areas within the general contract work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before contract project construction work commences. Where contract project construction work is to be conducted during period of darkness, the markers shall be clearly visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms, and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

3.2.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading work. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

3.2.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

(A) Retardation and control of runoff. Runoff from the construction

site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.

(B) Erosion and sedimentation control devices. The Contractor shall construct/install temporary and permanent erosion and sedimentation control features as indicated or required. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.

(C) Sediment basins. Sediment from construction work areas shall be trapped in temporary or permanent sediment basins. The sediment basins shall be constructed in accordance with basin plans when shown on the drawings. The basins shall accommodate the runoff of a local 5 year storm, except that the design storm event required by the watershed district, watershed management board, or similar governing agency shall be used if available. After each storm, the basins shall be pumped dry and accumulated sediment shall be removed to maintain basin effectiveness. Overflow shall be controlled by paved weirs or by vertical overflow pipes. The collected topsoil sediment shall be reused for fill on the contract project work site, and/or stockpiled for use later. The Contractor shall institute effluent quality monitoring programs as required by State and local environmental agencies.

3.2.5 Contractor Facilities and Work Areas

Each Contractor's field office, staging area, stockpile storage area, and temporary building shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

3.3 WATER RESOURCES

The Contractor shall keep contract project construction work under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by the Contractor's construction work shall be the Contractor's responsibility. All water areas affected by the Contractor's construction work shall be monitored by the Contractor.

3.3.1 Washing and Curing Water

Waste waters directly derived from the Contractor's construction work shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water.

3.3.2 Cofferdam and Diversion Operations

Construction work for dewatering, water return for hydraulic dredging, installation and removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to limit the impact of water turbidity on the habitat for wildlife and on water quality for downstream use. The Contractor shall plan its operations and perform all work necessary to minimize adverse impact or violation of the water quality standards applicable to this contract.

3.3.3 Stream Crossings

Stream crossings shall be controlled during construction work. Crossings shall provide movement of materials or equipment which do not violate water pollution control standards of Federal, State, or local governments.

3.3.4 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of contract project construction work.

3.4 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the required project contract construction work shall be in accordance with: State air pollution statutes, rules, and regulations; and Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring of air quality shall be the Contractor's responsibility. All air areas affected by the contract project construction activities shall be monitored by the Contractor.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

3.4.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

3.4.3 Odors

Odors shall be controlled at all times for all construction work including processing and preparation of materials.

3.4.4 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall use methods and devices to control noise emitted by equipment to within the levels specified in the "Safety and Health Requirements Manual" referenced in the CONTRACT CLAUSES: ACCIDENT PREVENTION.

3.5 WASTE DISPOSAL

The Contracting Officer shall be informed of any waste disposal requirements identified during the contract period and not covered in the Environmental Protection Plan. Waste disposal plans shall be updated and submitted as required.

3.5.1 Solid Wastes

Solid wastes (excluding dredge material and clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.5.2 Chemical Wastes

Chemical waste shall be stored in corrosion resistant containers, removed from the work areas, and disposed of in accordance with Federal, State, and local laws and regulations.

3.6 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the contract project work area will be so designated by the Contracting Officer if any have been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out. The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during contract project construction work any previously unidentified or unanticipated resources are discovered or found, all work that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer.

3.7 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for contract project construction work.

3.8 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during contract project construction work outside the neat lines of project work features. Such restoration shall be in accordance with the Environmental Protection Plan. This restoration work shall be accomplished at the Contractor's expense and at no additional cost to the Government.

3.9 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time the Contractor's activities create the particular pollutant.

3.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities, devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01451

CONTRACTOR QUALITY CONTROL

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SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(1999C) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following items shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES.

SD-08 Statements

Laboratory Quality Management Manual; FIO.

Manual(s) as required in paragraph: Tests - Testing Laboratories - Capability Check.

Contractor Quality Control (CQC) Plan; FIO.

The CQC plan as required in paragraph: Quality Control Plan.

1.3 PAYMENT

The Contractor shall be responsible for the work this section without any direct compensation being made other than the payment received for contract items.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the CONTRACT CLAUSES: INSPECTION OF CONSTRUCTION. The quality control system

shall consist of plans, procedures, and organization necessary to produce an end product which meets the requirements of the contract documents. The quality control system shall cover all contract project construction work (including operations, activities, etc,) both onsite and offsite, and shall be keyed to the proposed contract project construction work sequence. The Contractor's project superintendent shall be responsible for the quality of contract project work on the work site and will be subject to removal by the Contracting Officer for non-compliance with quality requirements of the contract documents. The Contractor's project superintendent in this context will mean the individual with the responsibility for the overall management of the contract project work including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall submit for review by the Government, not later than 15 calendar days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the CONTRACT CLAUSES: INSPECTION OF CONSTRUCTION. The CQC Plan shall identify personnel, procedures, control, instructions, test, records, and forms to be utilized. The Government will consider an interim plan for the first 30 calendar days of the Contractor's contract operations. Contract project construction work will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim CQC Plan applicable to the particular feature of construction work to be started. Construction work outside of the features of construction work included in an accepted interim CQC Plan will not be permitted to begin until acceptance of a CQC Plan or another interim CQC Plan containing the additional features of construction work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all contract project construction work (operations, activities, etc,), both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

(A) A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the contract project work required. The staff shall include a CQC System Manager who shall report to the Contractor's project superintendent.

(B) The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

(C) A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop contract work which is not in compliance with the contract documents. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

(D) Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

(E) Control, verification, and acceptance testing procedures for each specific test to include the test name, technical specification paragraph requiring test, feature of work to be tested, testing frequency, and person responsible for each test. Laboratory facilities will be subject to approval by the Contracting Officer.

(F) Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

(G) Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

(H) Reporting procedures, including proposed reporting formats.

(I) A list of the definable features of the contract project construction work. A definable feature of such work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each technical specification section of the contract documents may generally be considered as a definable feature of the contract project construction work, there are frequently more than one definable features work under a particular technical specification section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's CQC plan is required prior to the start of contract project construction work. Acceptance is conditional and will be predicated on satisfactory performance during the contract project construction period. The Government reserves the right to require the Contractor to make changes in its CQC Plan and operations/activities including removal of personnel, as necessary, to obtain the quality required.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of each proposed change. Each proposed change is subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of contract project construction work, and prior to acceptance by the Government of the CQC Plan, the Contractor shall attend a Coordination Meeting with the Contracting Officer and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the Coordination Meeting, a mutual understanding of the CQC system details shall be developed,

including the forms for recording the CQC operations, control activities, testing, administration of the CQC system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance (QA). Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract project file. There may be occasions when subsequent conferences may be requested by either the Contractor or the Government in order to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization which shall be at the contract project work site at all times during progress of the contract project construction work and with complete authority to take any action necessary to ensure compliance with the contract documents. All CQC staff members will be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC system and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer or a graduate of an accredited construction program, with a minimum of five years post-graduate construction experience on similar type construction to this contract. Alternatively, the CQC System Manager may have a minimum of 15 years of construction experience with demonstrated experience in quality control on similar type construction to this contract. The CQC System Manager shall be assigned no other duties outside of CQC System Manager. The CQC System Manager shall be on the contract project work site at all times during contract project construction work periods and shall be employed by the Contractor, except as noted in the following. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the CQC Plan to serve in the event of the System Manager's absence. A period of absence may not exceed two calendar weeks at any one time, and not more than 30 workdays during a calendar year. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 Additional Requirement

In addition to the above qualifications, the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered through the Government in the Minneapolis - St. Paul, Minnesota metropolitan area.

3.4.4 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTAL PROCEDURES

Submittals shall be made as required in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals meet the requirements of the contract documents.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the contract project construction work, including that of subcontractors, suppliers, etc., meets the requirements of the contract documents. At least three phases of quality control shall be conducted by the CQC System Manager for each definable feature of contract project construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of contract project construction work, after all required plans/documents/materials have been approved/accepted, and after copies of such are located at the contract project work site. This phase shall include:

(A) A review of each applicable technical specification paragraph.

(B) A review of the applicable technical drawing.

(C) A check to assure that all materials and/or equipment have been tested, submitted, and approved.

(D) Review of provisions that have been made to provide required control inspection and testing.

(E) Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract documents.

(F) A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

(G) A review of the appropriate activity hazard analysis to assure safety requirements are met.

(H) Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document work tolerances and workmanship standards for that feature of work.

(I) A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

(J) Discussion of the initial control phase.

(K) The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature of work. The results

of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet the requirements of the contract documents.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of contract project construction work. The following shall be accomplished:

(A) A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

(B) Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

(C) Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

(D) Resolve all differences.

(E) Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

(F) The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

(G) The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which meets the requirements of the contract documents. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when required. The Contractor shall procure the services of a testing laboratory meeting the requirements listed under paragraph: CAPABILITY CHECK, or establish a testing laboratory at the contract project work site meeting those requirements. The Contractor shall perform the following activities and record and provide the following data:

(A) Verify that testing procedures comply with contract requirements.

(B) Verify that facilities and testing equipment are available and comply with testing standards.

(C) Check test instrument calibration data against certified standards.

(D) Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

(E) Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Technical specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract documents and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. The Contractor shall submit a Quality Management Manual meeting the requirements of ASTM D 3740 and ASTM E 329 for each laboratory to be used, including on-site project laboratories.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a minimum charge of $1,000.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control

testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor and at no additional cost to the Government. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Contracting Officer. Coordination for each specific test, exact delivery location, and dates shall be made with the Contracting Officer.

3.8 COMPLETION INSPECTION

3.8.1 Punch-out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Contract Requirements: "Commencement, Prosecution, and Completion of Work", or stated elsewhere in the contract documents, the CQC System Manager shall conduct a Punch-out Inspection of the work and develop a punch list of items which do not conform to the approved contract documents. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph: DOCUMENTATION below, and shall include the estimated date by which the deficiencies shall be corrected. The CQC System Manager or staff shall make a second Punch-out Inspection to ascertain that all deficiencies have been corrected. Once this has been accomplished, the Contractor shall notify the Government that the work is ready for the Government's Pre-Final Inspection.

3.8.2 Pre-final Inspection

The Government will perform a Pre-final Inspection to verify that the contract project construction work is complete and ready to be acceptance. A Government pre-final punch list may be developed as a result of the Pre-final Inspection. The CQC System Manager shall ensure that all items on this Government pre-final punch list have been corrected before notifying the Government of such so that a Final Acceptance Inspection, with the customer if applicable, can be scheduled. Each item noted on the Pre-final Inspection shall be corrected in a timely manner to the satisfaction of the Government. These inspections and all deficiency corrections required shall be accomplished within the time slated for completion of the entire contract project work or any particular increment thereof if the contract project work is divided into increments with separate completion dates.

3.8.3 Final Acceptance Inspection

The CQC inspection personnel, including the superintendent or other primary management person, and the Contracting Officer shall be in attendance at a Final Acceptance Inspection. Additional Government personnel may also be in attendance. The Final Acceptance Inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final Inspection. Notice shall be given to the Contracting Officer at least 14 calendar days prior to the scheduled date of the Final Acceptance Inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, shall be complete and acceptable by the date scheduled for the Final Acceptance Inspection.

Failure of the Contractor to have all contract project work acceptably complete for the Final Acceptance Inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the CONTRACT CLAUSES: INSPECTION OF CONSTRUCTION.

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

(A) Contractor/subcontractor and their area of responsibility.

(B) Operating plant/equipment with hours worked, idle, or down for repair.

(C) Work performed each day, giving location, description, and by whom. When Network Analysis System (NAS) scheduling is used, identify each phase of work performed each day by NAS activity number.

(D) Test and/or control activities performed with results and references to technical specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action proposed and/or accomplished.

(E) Quantity of materials received at the contract project work site with statement(s) as to acceptability, storage, and reference to technical specifications/drawings requirements.

(F) Submittals reviewed, with contract reference, by whom, and action(s) accomplished.

(G) Off-site surveillance activities, including actions accomplished.

(H) Job safety evaluations stating what was checked, results, and instructions and/or corrective actions.

(I) Instructions given/received and conflicts, if any, with the technical specifications/drawings.

(J) Contractor's verification statement.

These records shall indicate a description of trades working on the contract project work; the number of personnel working; weather conditions encountered; and delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract requirements. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 calendar days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by

the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

The following sample forms are included at the end of this section:

(A) Construction Quality Control Management Report

(B) CQC Report

(C) Preparatory Phase Checklist

(D) Initial Phase Checklist

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of each detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the contract project work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the contract project work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time, excess costs, and/or damages by the Contractor.

3.12 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM FOR CONTRACTOR QUALITY CONTROL OF CONTRACT

The Contractor shall utilize the Government furnished Contractor Quality Control (CQC) module of the Resident Management System (RMS). The RMS-CQC module is a computer program which is executable on IBM compatible computers with (minimum) 80386, 80486, and Pentium processors. This module includes a daily CQC reporting form which must be used. The module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment and shall be updated as required. The Contractor shall complete module elements including:

Prime Contractor staffing.
Subcontractor information, including name, address, trade, and point of contact.
Submittal information, including description, activity number, review period, expected procurement period.
Quality control testing.
Definable features of work.
Installed property listing.
Transfer property listing.
Pay activity and activity information.
Planned cumulative progress earnings.
Scheduled employee education required by the contract documents.
Insurance expiration dates.

3.12.1 Revisions

The Contractor shall acknowledge receipt of Government comments relating to the RMS-CQC module by specific number reference on the Contractor's Daily

CQC Report. The Contractor's Daily CQC Report shall also report when corrections are implemented.

3.12.2 Pay Activity

The sum of all pay activity values shall equal the contract amount. Contract pay (bidding schedule) items may include multiple activities, but activities shall only be assigned to one contract pay item.

CONSTRUCTION QUALITY CONTROL MANAGEMENT REPORT

Contractor Production

Contractor's Name:

_____

_____

Daily Report No: _____ **Date:** _____
Contract No.: _____

Project Title & Location: _____

Weather: _____ **Precipitation:** _____ **in. Temp.:** _____ **Min.** _____ **Max.**

1. Contract/Subcontractors and Area of Responsibility:

No	Trade	Hours	Employer	Location/Description of Work

2. Operating Plant or Equipment. (Not handtools)

Plant/Equipment	Date Arrive/Depart	Date Safety Check	Hours Used	Hours Idle	Hours Repair

CQC Report

1. Work performed today: (Indicate location and description of work performed by prime and/or subcontractors by letter in table above).

2. Results of control activities: (Indicate phase as: "P" {= Preparatory}, "I" {= Initial}, or "F" {= Follow-up}. When a "P" or "I" meeting is conducted, complete attachment 1-A or 1-B, respectively. When network analysis system is used, identify work by use of I-J numbers)

3. Test performed as required by contract documents:

4. Material received:

CQC Report (Cont'd)

5. Submittals Reviewed:

(a) Submittal No.	(b) Spec./Dwg. Reference	(c) By Whom	(d) Action

6. Off-site surveillance activities, including action taken:

7. Job safety: (Report violations; corrective instructions given; and corrective actions taken.)

8. Remarks: (Instructions received or given. Conflict(s) with contract documents.)

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and accurate, and all materials and equipment used and work performed during this reporting period are in compliance with the contract documents, to the best of my knowledge, except as noted above.

CQC System Manager

PREPARATORY PHASE CHECKLIST

Contract No.: _____ **Date:** _____
Definable Feature: _____
Tech. Spec Section: _____
Government Rep. Notified: _____ **Hours in Advance: Yes** ___ **No** ___

I. Personnel Present:

	Name	Position	Company/Government
1.			
2.			
3.			
4.			
5.			
6.			
7.			

(List additional personnel on reverse side)

II. Submittals.

1. Review submittals and/or submittal log 4288. Have all submittals been approved? Yes ___ **No** ___

If No, what items have not been submitted?
a. _____
b. _____
c. _____

2. Are all materials on hand? Yes ___ **No** ___
a. _____
b. _____
c. _____

3. Check approved submittals against delivered material. (This should be performed as material arrives).
Comments: _____

III. Material Storage.
Are materials stored properly? Yes ___ **No** ___
If No, what action is taken? _____

Preparatory Phase Checklist (Cont'd)

IV. Technical Specifications.

1. Review each paragraph of technical specification sections.

2. Discuss procedure for accomplishing the work.

3. Clarify any differences.

V. Preliminary Work.
Ensure preliminary work is correct.
If not, what action is taken? _____

VI. Testing.

1. Identify test to be performed, frequency, and by whom.

2. When required? _____
3. Where required? _____
4. Review testing plan? _____
5. Has test facilities been approved? _____

VII. Safety.
1. Review applicable portion of EM 385-1-1? _____

2. Activity Hazard Analysis approved? Yes ___ No ___

VIII. Corps of Engineers comments during meeting.

_____
CQC System Manager

INITIAL PHASE CHECKLIST

Contract No.: _____ **Date:** _____

Definable Feature: _____

Government Rep. Notified: _____ **Hours in Advance: Yes** ___ **No** ___

I. Personnel Present:

	Name	Position	Company/Government
1.			
2.			
3.			
4.			
5.			
6.			

(List additional personnel on reverse side)

II. Identify full compliance with procedures identified at preparatory. Coordinate drawings, specifications, and submittals.
Comments: _____

III. Preliminary Work. Ensure preliminary work is complete and accurate.
If not, what action is taken? _____

IV. Establish Level of Workmanship.
1. **Where is work located?** _____
2. **Is a sample panel required? Yes** ___ **No** ___
3. **Will the initial work be considered as a sample? Yes** ___ **No** ___
(If yes, maintain in present condition as long as possible).

V. Resolve any Differences.
Comments: _____

Review job conditions using EM 385-1-1 and job hazard analysis.
Comments: _____

_____
CQC System Manager

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

-- End of Section Table of Contents --

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Site Plan; FIO.

The Contractor shall prepare a site plan indicating the proposed location and dimensions of each area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area, and details of the fence installation. Areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Sanitation

The Contractor shall provide and maintain within the contract project work area field-type sanitary facilities in accordance with the "Safety and Health Requirements Manual" referenced in the CONTRACT CLAUSES: ACCIDENT PREVENTION. These sanitary facilities shall include but not be limited to toilet, washing, and drinking water facilities.

1.2.2 Telephone

The Contractor shall make arrangements and pay all related costs for its telephone facilities desired. Government personnel will not take or deliver messages for the Contractor.

1.3 PROTECTION AND MAINTENANCE OF TRAFFIC

During the contract period the Contractor shall provide access and temporary relocated roads as necessary in order to maintain normal public and Government related vehicle traffic flow. The Contractor shall maintain and protect traffic on all affected roads during the contract period unless directed otherwise by the Contracting Officer. The following shall be provided as required by the state and local authorities having such jurisdiction: measures for the protection and diversion of vehicle traffic, including the provision of watchpersons and flagpersons, erection of barricades, placement of lights around and in front of equipment and the construction work, and the erection and maintenance of adequate warning, danger, and direction signs. The public shall be protected from damage to

person and property. The Contractor's traffic on roads selected for hauling material to and from each contract project work site shall interfere as little as possible with public and Government pedestrian and vehicle traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit(s) on such roads.

1.3.1 Haul Roads

The Contractor shall, at its own expense, construct temporary access and temporary haul roads necessary for proper prosecution of the contract project work. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic (pedestrian and vehicular). The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Lighting shall be adequate to assure full and clear visibility for full width of haul road and work areas during night (including low visibility periods) work operations. Upon completion of the work, temporary haul roads designated by the Contracting Officer shall be removed.

1.3.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to areas such as roads, parking areas, or sidewalks is prevented by the Contractor's construction work or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both daylight and night time periods.

1.4 CONTRACTOR'S TEMPORARY FACILITIES

1.4.1 Administrative Field Offices

The Contractor shall provide and maintain its own administrative field office facilities within each contract project work area at the site(s) designated by the Contracting Officer. Government field office units and warehouse facilities, when required, will not be available for use of the Contractor's personnel.

1.4.2 Staging Area

The boundary limits of the grounds made available for the Contractor's use during the life of the contract are shown on the drawings as "Work Limits". Trailers, materials, or equipment shall not be placed or stored outside of these work limits.

1.5 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. These devices shall be made available for use by Government personnel.

1.6 IDENTIFICATION OF CONTRACTOR PERSONNEL

Contractor personnel include the Contractor's employees, subcontractors of the Contractor, owners of the Contractor's organization, and the Contractor's visitors; other personnel may also be classified as Contractor personnel when so determined by the Contracting Officer. The Contractor shall be responsible for furnishing to each of its personnel and for requiring each such individual engaged on the contract project work site to display identification as approved and as directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of each individual. When required, the Contractor shall obtain and furnish the fingerprints of individuals involved in the contract work at the contract project work site. All Contractor personnel shall wear identifying markings on hard hats clearly identifying the company, organization, firm, etc., for whom the individual represents.

1.7 CONTRACTOR PERSONNEL VEHICLE PARKING

Space for parking vehicles within and adjacent to the contract project work site is very limited. When parking space, including applicable time and date restrictions, has been determined by the Contracting Officer as available for Contractor vehicles, Contractor personnel shall only park their vehicles in the area(s) designated in the field at the contract project work site by the Contracting Officer. Contractor personnel vehicle parking shall not interfere with existing and/or established vehicle parking requirements in and near the contract project work site.

PART 2 PRODUCTS

2.1 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

2.1.1 Bulletin Board

Immediately upon beginning of contract project construction work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 inches by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, a Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at each contract project work site in a conspicuous location and easily accessible to all workers, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until the contract project construction work has been completed. Upon completion of the contract project work, the bulletin board shall be removed by and remain the property of the Contractor.

2.1.2 Project and Safety Signs

The Contractor shall furnish and erect a project sign and a safety sign in location(s) selected by the Contracting Officer at each contract project work site within 15 calendar days after receipt of the Notice to Proceed. The requirements for the signs and their content shall be as presented on the following sketches included at the end of this section: "PROJECT SIGN"; "SAFETY SIGN"; and "SIGN ERECTION DETAILS". The data required by the safety sign shall be updated daily. Each sign shall be maintained throughout the contract period, and upon completion of the contract period, each sign shall be removed from the contract project work site. The

project sign's "Project Description" and "Project Name" shall be as follows:

Project Description: Fill in per project sign sketch

Project Name: Fill in per project sign sketch

2.1.2.1 Quantity of Signs

Each contract project work site shall have its own separate set of required project and safety signs installed at the respective and approved location.

PART 3 EXECUTION

3.1 CLEANUP

Construction debris, waste materials, packaging material, etc., shall be removed from the contract project work site. Dirt and mud which has been tracked onto paved (surfaced) roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area(s) described above or at supplemental storage area(s). Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

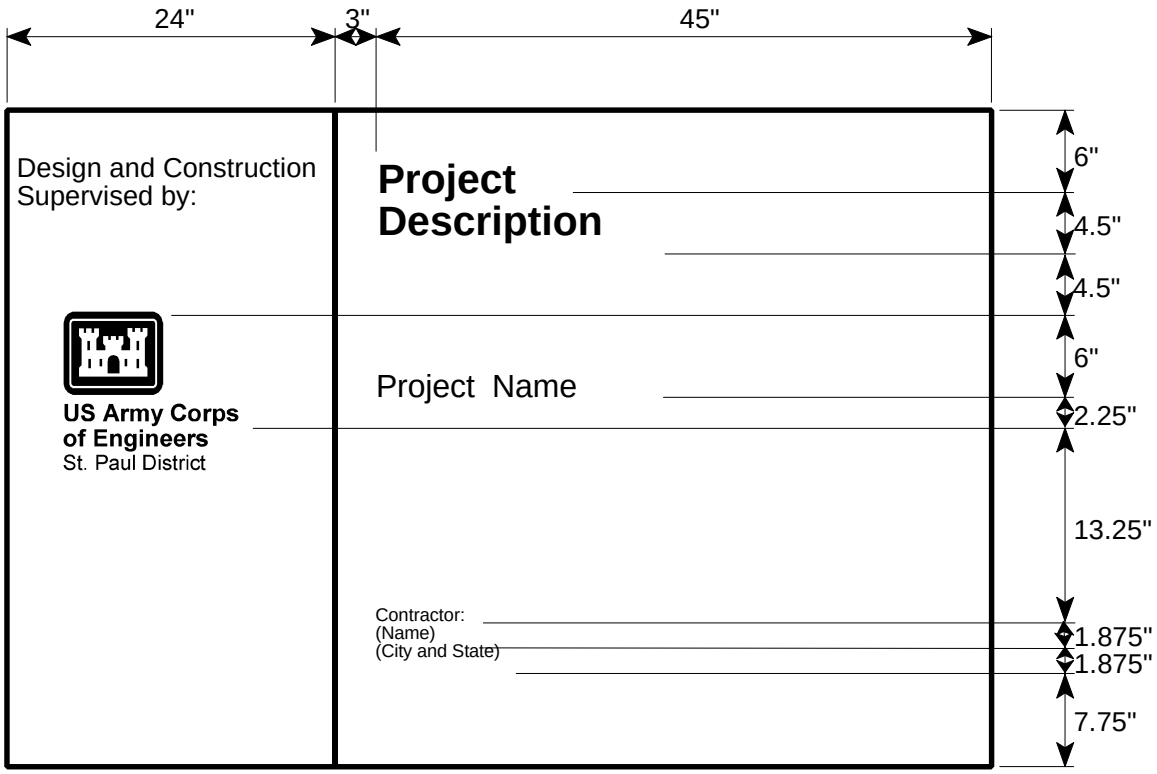
3.2 RESTORATION OF STORAGE AREA

Upon completion of the contract project construction work and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and shall become the property of the Contractor. Areas used by the Contractor for the storage of equipment, materials, or for other uses, shall be restored to the original or better pre-construction condition. Gravel used to traverse turfed areas shall be removed and the area restored to its original or better preconstruction condition, including turfing (topsoiling, seeding, sodding, watering) as necessary.

-- End of Section --

PROJECT SIGN

The graphic format tor this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel on the right is to be white with black legend. A 2' x 4' decal provided by the Corps shall be placed on the left side of the sign panel.



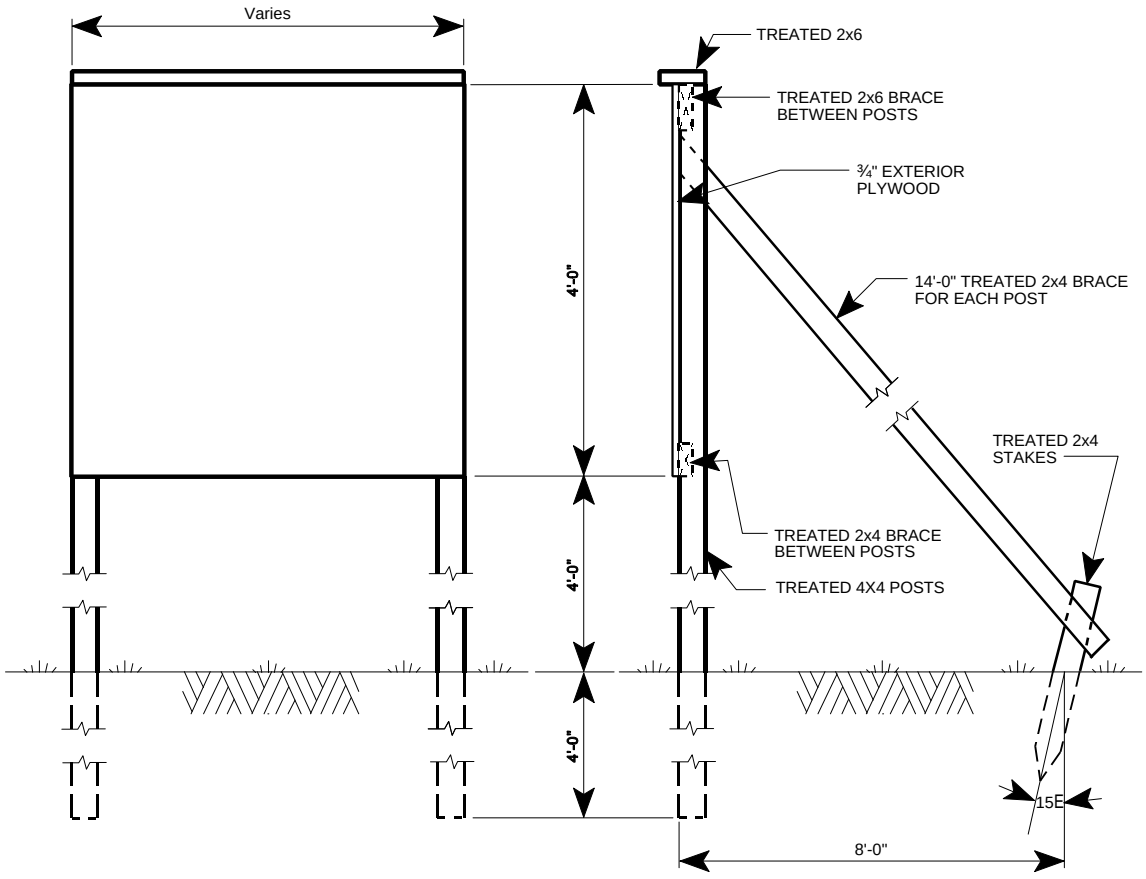
Project Description:
One to three line project title legend describes the work being done under this contract.
Color: Black; Typeface: 3" Helvetica Bold; Maximum line length: 42".

Project Name:
One to three line identification of project or facility.
Color: Black; Typeface: 1.5" Helvetica Bold; Maximum line length: 42".
Cross-align the first line of PROJECT NAME with the first line of the Corps Signature as shown.

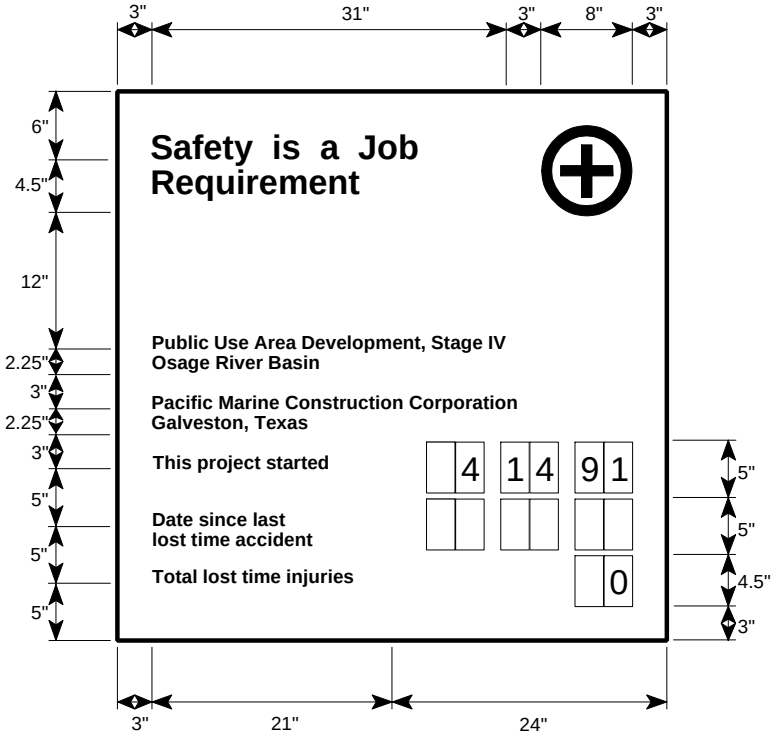
Contractor:
One to five line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state.
Color: Black; Typeface: 1.25" Helvetica Bold; Maximum line length: 21".

All typography is flush left and ragged right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

SIGN ERECTION DETAILS



SAFETY SIGN



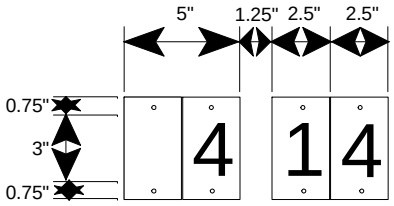
All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps Standards (EP 310-1-6a and 6b).

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with (8" od.) Safety Green First Aid logo. Typeface: 3" Helvetica Bold; Color: Black.

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Typeface: 1.5" Helvetica Regular; Color: Black; Maximum line length: 42".

Legend Group 4: Standard safety record captions as shown. Typeface: 1.25" Helvetica Regular; Color: Black.



Replaceable numbers are to be mounted on white 0.060 aluminum plates and screw-mounted to background. Typeface: 3" Helvetica Regular; Color: Black; Plate size: 2.5" x 4.5".

Section 01500

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DIVISION 05 - METALS

SECTION 05101

METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS

-- End of Section Table of Contents --

SECTION 05101

METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS

PART 1 GENERAL

1.1 SCOPE

This section covers general workmanship requirements, applicable to fabrication, assembly, welding, and miscellaneous items of metalwork and machine work.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC S 329	(1996) Allowable Steel Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 325M	(1997) High-Strength Bolts for Structural Steel Joints (Metric)
ASTM A 490M	(1997) High-Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints (Metric)
ASTM E 165	(1995) Liquid Penetrant Examination

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(2000) Structural Welding Code - Steel

1.3 MEASUREMENT AND PAYMENT

The work under this section will not be measured for separate payment and the costs therefor shall be included in the contract price for the item(s) to which the work pertains.

1.4 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Drawings; GA.

Shop drawings shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of materials as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and/or the Contractor and included on the shop drawings.

SD-07 Schedules

Materials List; FIO.

Materials list for fabricated items shall be submitted at the time of submittal of detail drawings. The Contractor shall submit copies of all purchase orders, mill orders, shop orders, work orders, and/or other purchase information relevant to Contractor fabricated items. The Contractor shall designate the materials to be used for each Contractor fabricated item at the time of submittal of the shop drawings.

SD-08 Statements

Welding Procedures for Structural Steel; GA.

Complete schedules of welding procedures shall be submitted in accordance with AWS D 1.1. Include make and model of welding equipment, machinery settings, and specifications for consumables. Fabrication shop drawings with complete weld call outs for weldments shall form a part of the welding procedures. Certifications of welding operator qualification shall be submitted for all welders that work under this contract. For multiple welding personnel, identify the specific welds that the specific welding operator shall be performing. Schedules of welding procedures for steel structures shall be submitted and approved prior to commencing fabrication.

Structural Steel Welding Repairs; GA.

Welding repair plans for steel shall be submitted and approved prior to making repairs.

Nondestructive Testing;GA.

Submit the name/address/qualifications of the NDT agency and the inspectors name and qualifications proposed to perform the nondestructive examination of welds as required under this section.

SD-09 Reports

Tests, Inspections, and Verifications; FIO.

Copies of any certified test reports for all material tests, nondestructive testing examinations, welding procedures, and welding operator qualifications shall be submitted. Test reports for material tests and analyses shall be identified to be linked with specific lots and items to which they pertain.

SD-13 Certificates

Qualification of Welders and Welding Operators; FIO.

Certifications for welders and welding operators shall be submitted prior to commencing fabrication.

Application Qualification for Steel Studs; GA.

Certified reports for the application qualification for steel studs shall be submitted and approved prior to commencing fabrication.

SD-18 Records

As-Built Drawings; GA.

Detailed drawings updated to reflect as-built conditions after all associated contract project construction work is completed, on reproducible full-size mylar film, no later than 10 working days after completion of the final Government acceptance. Each as-built drawing shall have a title block similar to the title on the contract drawings.

Materials Disposition Records; FIO.

A system of identification which shows the disposition of specific lots of approved materials and fabricated items in the work shall be established and submitted before completion of the contract.

1.5 METALWORK AND MACHINE WORK DETAIL DRAWINGS

Shop drawings for metalwork and machine work shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of material as appropriate. Elements of fabricated items inadvertently omitted on contract drawings shall be detailed by the fabricator and indicated on the shop drawings.

1.6 QUALIFICATION OF WELDERS AND WELDING OPERATORS

The Contractor shall certify that the qualification of welders and welding operators and tack welders who shall perform structural steel welding have been qualified for the particular type of work to be done in accordance with the requirements of AWS D1.1, Section 5, or the ASME Boiler and Pressure Vessel Codes, Section IX prior to commencing fabrication. The certificate shall list the qualified welders by name and shall specify the code and procedures under which qualified and the date of qualification. Prior qualification will be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require welders to repeat the qualifying tests when their work indicates a reasonable doubt as to proficiency. Those passing the requalification tests will be recertified. Those not passing will be disqualified until passing. All expenses in connection with qualification and requalification shall be borne by the Contractor.

PART 2 PRODUCTS

2.1 GENERAL

Requirements for materials and equipment used to perform welding are detailed in PART 3 of this section. All equipment required for the contract project work under this section shall be furnished by the Contractor.

PART 3 EXECUTION

3.1 STRUCTURAL FABRICATION

The Contractor shall describe and submit all fabrication details for items that are Contractor fabricated and/or furnished to the extent that a third party could produce the parts using only the details supplied on the shop drawings. All welds required for this contract work shall have weld descriptions and callouts prepared and submitted for approval on shop drawings by the Contractor. Material with welds other than where approved will not be acceptable. Where heating is required, such as for bending or flame cutting, it shall be described on submitted shop drawings as a fabrication detail, and precautions shall be taken not impair the original properties of the metal. Shearing shall be accurate and all surfaces of fabricated items shall be deburred with external corners radiused. Re-entrant cuts shall be filleted to a minimum radius of 3/4 inch unless approved otherwise. Finished members shall be free of twists, bends, and open joints. Structural steel may be cut with mechanically guided flame cutting torches provided that an accurate profile with a surface that is smooth and free from cracks and notches is obtained.

3.1.1 Dimensional Tolerances For Structural Work

The overall dimensions of an assembled structural unit shall be within the tolerances indicated on the drawings or as otherwise required. Where dimensional tolerances are not required, the allowable variation between the nominal dimensions shown on the contract drawings and the actual dimension shall be no greater than 1/16 inch for dimensions 30 feet or less. Allowable variation from the nominal is 1/8 inch for members over 30 feet in length.

3.1.2 Structural Steel Fabrication

The maximum surface roughness for Contractor furnished steel fabrications (including bores, cuts, machined surfaces) shall be 500 micro-inches unless otherwise approved. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1, Subsection 3.2. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of cuts.

3.2 WELDING

The following are requirements for all welding work done under this contract, including the rail clip welding.

3.2.1 Welding Process

All welding shall be done with the shielded metal arc welding (SMAW) process unless otherwise approved. Welding shall conform to the applicable provisions of AWS D1.1, Sections 1 through 7, 9, 10 and 11 unless otherwise approved.

3.2.2 Welding Procedures

The Contractor shall prepare and submit complete welding procedures for each weld with tables and/or diagrams showing the procedure to be used for each required joint. The schedule shall conform to AWS D1.1. Procedures shall include filler metal designation, and any preheat, interpass temperature, and stress relief requirements. Procedures shall prescribe welding machine parameters (speeds, amperes, polarity, etc.). Procedures shall be qualified by tests as prescribed in AWS D1.1, Section 5 except for

prequalified procedures described in AWS D1.1, Subsection 5.1. Properly documented evidence of compliance with previous qualification tests shall establish the joint welding procedure as prequalified. Each procedure shall be clearly identified as being prequalified or qualified by tests. The test welding and specimen testing must be witnessed and the test report document must be signed by an authorized representative of the Contracting Officer. Approval of a procedure shall not relieve the Contractor of the responsibility for producing a finished structure meeting all contract requirements.

3.2.3 Qualification of Welders

Welders, including welding operators and tack welders, shall be qualified, and requalified when necessary, for the particular type of required contract work. Qualification shall be in accordance with AWS D1.1, Section 5. The Contractor shall certify by name the welders so qualified, the date of qualification, and the code and procedures under which qualified. Prior qualification will be accepted if the welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require welders to repeat the qualifying tests when in the opinion of the Contracting Officer their work indicates a reasonable doubt as to their proficiency. Only those welders passing the requalification tests shall be recertified; those not passing shall be disqualified until they pass. All expenses in connection with qualification and requalification shall be borne by the Contractor at no additional cost to the Government.

3.2.4 Technique

(A) Filler Metal. The Contractor's welding electrodes and filler metal shall conform to the appropriate AWS specifications and standards for the base metal and welding process being used. The AWS designation of the electrodes (filler metal) shall be included in the schedule of welding procedures. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. The rail clip welding shall use only E7018 low hydrogen electrodes. Welding electrodes shall be stored in a controlled temperature oven at the work site as prescribed by AWS D1.1, Subsection 4.5 in order to maintain low moisture of low hydrogen electrodes.

(B) Preheat and Interpass Temperature. Preheating shall be performed in accordance with AWS D1.1, Subsections 4.2 and 4.3. The temperature of the base metal shall in any case be at least 70 0F at the time of welding. Any weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding has been completed, and then permitted to cool slowly in still air.

(C) Stress-Relief Heat Treatment. Where stress relief heat treatment is required it shall be in accordance with AWS D1.1, Subsection 4.4 unless otherwise approved by the Contracting Officer.

3.2.5 Workmanship

Workmanship for welding shall be in accordance with AWS D1.1, Section 3 and as required.

(A) Preparation of Base Metal. Prior to commencing welding, the Contractor shall inspect surfaces to be welded to assure compliance

with AWS D1.1, Subsection 3.2.

(B) Temporary Welds. Temporary welds required for fabrication and erection shall be made under the same controlled conditions prescribed for permanent welds under this contract work. Temporary welds shall use low-hydrogen welding electrodes and the same welding equipment and welding operators as qualified for permanent work. Temporary weld arcs shall not be struck in other than permanent weld locations. Each temporary weld shall be removed and ground flush with adjacent surfaces after serving its intended purpose.

(C) Tack Welds. Tacks welds are welds that are to be incorporated into the permanent work. Tack welds shall be subject to the same quality requirements as required for temporary welds, except that tack welds shall be cleaned and thoroughly fused with permanent welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before commencing permanent welding.

3.2.6 Welding Inspection

Visual examination of all welds done for this contract is required. Each weld visually examined and suspected of having cracks and/or lack of fusion shall be subjected to a liquid penetrant test in accordance with ASTM E 165. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to insure compliance with AWS D1.1, Section 3 and Section 9, Part D.

3.2.7 Acceptability of Welds

Welds will not be acceptable if shown to have defects prohibited by AWS D1.1, Subsection 9.25, or possess any degree of incomplete fusion, inadequate penetration, or undercutting.

3.2.8 Supplemental Examination

When the soundness of a weld is suspected of being deficient, the Government reserves the right to perform supplemental nondestructive examinations before final acceptance. The cost of such inspection will be borne by the Government.

3.2.9 Weld Repairs

Defective welds shall be repaired in accordance with AWS D1.1, Subsection 3.7. A welding repair plan shall be submitted for approval before repairs are made when so determined by the Contracting Officer. Defective weld metal shall be removed to sound metal by use of air carbon-arc or oxygen gouging. The surfaces shall be thoroughly cleaned before welding. Welds that have been repaired shall be retested by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds costs of repairs and retesting shall be borne by the Contractor at no additional cost to the Government.

3.3 BOLTED CONNECTIONS

Bolted connections assembled by the Contractor shall be in accordance with the instructions of the existing crane superstructure new components supplier (manufacturer) and the new crane undercarriage components supplier (manufacturer); and only fasteners supplied with the respective machinery

components shall be utilized. The following requirements apply except as otherwise required by the existing crane superstructure new components supplier and/or the new crane undercarriage components supplier.

3.3.1 Structural Steel Connections

Materials, workmanship, and installation shall conform to the applicable provisions of the AISC S 329. All nuts shall be equipped with washers with material properties equal to the fasteners. Beveled washers shall be used where bearing faces have a slope of more than 1 to 20 with respect to a plane normal to the bolt axis. All Contractor furnished fasteners shall conform to ASTM A 325M or ASTM A 490M material requirements.

3.3.2 Holes

Bolt holes made by the Contractor shall be accurately located, smooth, perpendicular to the member and cylindrical. Burrs shall be removed from hole edges. At least three threads of bolts shall extend through nuts at final assembly. Holes for bolts or screws shall have diameters of not more than 1/16 inch larger than bolt diameters. If the thickness of the material is not greater than the bolt diameter, the respective bolt holes may be punched. If the thickness of the material is greater than the diameter of the bolts the holes may be drilled full size, subpunched, or subdrilled at least 1/8 inch smaller than the diameter of the bolts and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting occurring during assembly shall not distort the metal or enlarge the holes. Reaming to a larger diameter of the next standard size bolt will be allowed for slight mismatching.

3.3.3 Fastener Torque Requirements

The Contractor shall apply a quality control program to verify that required (or reasonable) fastener torques are achieved and verified for any fasteners installed by the Contractor. A written procedure for fastener installation and quality control shall be formulated by the Contractor to include bolt and hole preparation, tightening sequence/pattern, identification of torque wrench, name of operator, and certification and date of work. All fasteners shall be tightened to final torque using a calibrated dial type torque wrench conforming to ANSI B107.14M. All fasteners with required torques shall be cleaned before assembly and treated with the approved thread lubricating compound unless otherwise required in the installation procedures. The following table lists bolting torque requirements for typical size threads. Unless otherwise required in the installation procedures, all fasteners assembled by the Contractor shall torqued to the values listed in the following table. The Contractor shall identify any fasteners that it installs that are not of the sizes listed below and these will be tightened in a similar manner to torque values consistent with their size and as approved.

TABLE 05101-3.3: Fastener Torque Requirements

Inch Series Bolt Diameter (UNC & SAE Grade 5; or ASTM A 325)	Torque(inch-pounds) Lubricated Threads
1/4 -20	50
5/16 -18	101
3/8 -16	179

7/16 -14	287
1/2 -13	437
5/8 -11	871
3/4 -10	1,544
7/8 - 9	2,492
1 - 8	3,735
1-1/8 - 7	4,654
1-1/4 - 7	6,574
1-3/8 - 6	8,619

NOTE: Lubricate threads with "NEVR-Seize" brand thread lubricating compound, or approved equal.

3.3.4 Seal Painting at Fasteners

For all fasteners (screws, bolts, pins, etc) installed by the Contractor at interfaces with painted surfaces, the connections shall be cleaned and seal painted over all exposed fastener portions and adjacent damaged paint coatings after final assembly. Seal painting shall match the surrounding coatings and shall completely fill voids or gaps at the fastener interface to prevent moisture entrainment and corrosion at the fasteners. Seal painting is also intended to give a simple initial indication if fastener relative motion occurs over time. The Contractor shall furnish sufficient quantities of the manufacturer's paint systems and all equipment to perform the seal painting. Prior to seal painting, excess thread lubricant, thread locking compounds, and other foreign substances shall be solvent cleaned from the exposed surfaces of the fasteners and at the joint.

3.4 SPECIAL PROTECTIVE COATINGS

All exposed corrodible surfaces shall be protected by suitable means (as approved) until assembly. Corrodible surfaces shall not be exposed unprotected for more than 15 minutes. Unassembled corrodible fasteners shall be oiled and wrapped with moisture resistant paper or protected by other approved means. Machined interfaces shall be thoroughly and carefully cleaned of foreign matter, including factory-applied paint (as for the crane pedestal interfaces and other protective coatings just before assembly. Before assembly, machined interfaces shall be coated with an approved anaerobic gap filling compound expressly designed for this purpose (similar to Loctite Gasket Eliminator 504) to prevent moisture entrainment at the joint.

3.5 CONTRACTOR QUALITY CONTROL

Workmanship shall be in accordance with the best modern practices to conform with the requirements for the item of work performed. The Contractor shall establish and maintain quality control for contract project work in order to insure compliance with contract requirements and maintain quality control for all contract project construction activities and operations.

3.5.1 Cleaning and Lubricating Parts

All parts to be installed shall be thoroughly cleaned before assembly. Packing compounds, rust, dirt, grit and, other foreign matter shall be removed. Lubrication ports shall be cleaned of contaminants before opening and before application of lubricants. Where units or items are shipped as assemblies, disassembly, cleaning, and lubrication will not be required except where required.

3.5.2 Handtools

Properly sized hand tools appropriate to the work shall be used at all times. Pipe wrenches, locking pliers, drifts, hammers, or other tools likely to cause damage to the surfaces of fasteners or other parts shall not be used for assembling.

3.5.3 Replacements

Existing and new items disconnected and/or removed by the Contractor prior to and/or during the contract period shall be replaced, with salvaged or new items, and/or reconnected by the Contractor. The Contractor shall, at its own cost and at no additional cost to the Government, furnish and install new replacement items inplace of salvaged items that have been determined unacceptable for reuse by the Contracting Officer.

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DIVISION 05 - METALS

SECTION 05502

METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

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SECTION 05502

METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC S 329	(1996) Allowable Steel Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B18.23.1	(1967) Beveled Washers

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36	(2000) Carbon Structural Steel
ASTM A 325M	(1997) High-Strength Bolts for Structural Steel Joints (Metric)

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

SAE J 429	(1999) Mechanical and Material Requirements for Externally Threaded Fasteners

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SSPC SP 10	(1994) Near White Metal Blast Cleaning

1.2 MEASUREMENT AND PAYMENT

The work under this section will not be measured for separate payment and the costs therefor shall be included in the contract price for the item(s) to which the work pertains.

1.3 SUBMITTALS

Government approval is required for all submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Drawings

Shop Fabricated Metal Items; GA.

General. Detail drawings shall be submitted for approval as required in

Section 05101 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Drawings shall include catalog cuts; templates; fabrication and installation details; and type, grade and class of materials, as appropriate. All erection and shop details shall be shown. Each component part of fabricated items omitted on contract drawings shall be detailed by the fabricator and/or Contractor on the shop drawings. The fabricator and/or Contractor shall be responsible for designing and submitting for approval all connections not detailed on the drawings.

Crane Stops; GA.

Submit shop drawings for each proposed installation to include existing service bridge deck underside details, locations of service bridge existing structural rivets to be replaced, location of new crane stop mounting fastener (bolt) holes (on both the existing service bridge deck and on the new crane stops) and subsequent clearances to end of railway structures.

Crane Rotation Limit Switches; GA.

Submit dimensioned shop drawings for fabricated components. Submit dimensioned shop drawing of assembly as to be installed to document position of limit switch lever arm relative to limit switch strike plate and attachment points on the new assembled crane underside.

Crane Travel Control Stations; GA.

Submit dimensioned shop drawings for fabricated parts and location of travel control stand mount brackets to be installed at the new crane operator control stands. Show methods of attachment to existing crane control stand area. Show dimensions and materials for each mount bracket. Show sufficient information to verify that the location does not interfere with other operator controls, gages, and line of sight.

SD-13 Certificates

Materials; FIO.

The Contractor shall submit a certificate of compliance for each material used for fabrication of contract work items stating that the material furnished meets the contract requirements.

1.4 FABRICATION AND WORKMANSHIP REQUIREMENTS

Fabrication requirements and workmanship provisions for items required in this technical section shall conform with the requirements of Section 05101 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. The Contractor shall verify dimensions for fabricated items by taking field measurements as necessary before commencing fabrication work. Materials, miscellaneous parts, and fasteners necessary to fabricate each item, even though not detailed in the contract documents, shall be furnished by the Contractor.

PART 2 PRODUCTS

2.1 MISCELLANEOUS METALS AND STANDARD METAL ARTICLES

Miscellaneous metal materials and standard metal articles shall conform to the respective specifications and other designated requirements. Sizes

shall be as shown or otherwise required. Where material requirements are not specifically stated, materials furnished shall be suitable for the intended use and shall be subject to approval.

2.1.1 Bolts, Nuts, and Washers

Bolts, nuts, and washers shall be of the material, grade, type, class, style, and finish indicated or best suited for intended use.

2.2 SHOP FABRICATED METAL ITEMS

Shop fabricated metal items shall conform to the requirements and details as required and to the workmanship provisions and other applicable fabrication requirements in accordance with Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

2.3 BOLTS, NUTS, THREADED RODS, AND WASHERS

All bolts, nuts, threaded rods, and washers used in Contractor furnished items shall have material properties conforming to ASTM A 325M or SAE J 429 Grade 5 and shall be hot-dip galvanized, unless otherwise required or approved. All bolts and threaded rods shall be supplied/installed with flat washers under each nut. Beveled washers shall be installed at all bolted connections with surface sloped greater than 1:20 and shall conform to ANSI B18.23.1.

2.4 FABRICATION AND ERECTION

Fabrication and erection of structural steel items, unless required otherwise, shall be in accordance with AISC S 329.

2.5 CRANE STOPS.

2.5.1 General

For Dam No. 5 project work site, the Contractor shall provide new crane stops, including fasteners, as indicated on the contract drawings. For the other remaining project work sites, the Contractor shall install Government furnished crane stops with Government furnished fasteners, as shown on the contract drawings. Except for Dam No. 5 project work site, at all remaining project work sites the crane stop mounting holes (for the government furnished crane stops) have already been drilled into the existing dam service bridge deck and shall be utilized by the Contractor. Each Contractor furnished new crane stop shall be fabricated from ASTM A 36 steel in accordance with the contract drawings. The Contractor shall submit shop drawings for approval for the new crane stop installation (both Contractor furnished and Government furnished) including details and locations based on the following criteria:

(A) Crane stop locations to maximize useful range of motion for the new assembled crane/undercarriage on the existing railway.

(B) Crane stop locations to provide undercarriage clearance to each existing handrail and/or pier house at either end of railway. Clearance shall be at least 3 feet with crane bumpers fully compressed (see reference drawing Nos.: M-LG-357/371, M-LG-357/374, M-LG-357/375, M-LG-357/376, and M-LG-357/379).

(C) New crane stops to be located between rail clips/clamps that are

spaced at 24 inches (approximate) on centers.

(D) Crane stop locations to allow clearance below existing service bridge deck elevation for installation of the quantity of crane stop mounting fasteners per new crane stop as indicated. Crane stop mounting fastener size(s) and grade(s) shall be as indicated; required fastener length(s) shall be determined by the Contractor.

2.5.2 Crane Stop Bolt Holes

The designs as shown require through-bolting the new crane stops to the existing service bridge deck. Crane stop mounting fasteners (bolts and nuts) shall be SAE J 429, Grade 8: bolts shall be hex socket head capscrews. The Contractor shall drill the holes for the crane stop mounting fasteners through the structure of the existing service bridge deck. The Contractor shall determine the specific locations for each crane stop mounting fastener hole taking into account the above stated criteria and the fact that existing service bridge vertical structural webs and other impediments below the deck may present clearance problems for the mounting fasteners. For these reasons the crane stop fastener holes in the service bridge deck or in the new crane stops themselves shall not be drilled until the Contractor has determined that there will be satisfactory clearance below deck at each proposed installation location.

2.5.3 Crane Stop Interference With Existing Structural Rivets

There will be multiple existing 3/4 inch diameter (nominal) round headed structural rivets located directly under the approximate locations for the new crane stop bases no matter where the new crane stops might be proposed to be located. These existing rivets would prevent the crane stops from fitting flush to the service bridge deck top surface and therefore these existing rivets shall be replaced with approved fasteners. All new crane stop mounting fastener holes shall be drilled at locations at least one new crane stop mounting fastener (bolt) diameter clearance from existing structural rivet holes or shall otherwise be coincident with that existing structural rivet hole. All of these coincident service bridge existing structural rivets shall be removed and replaced with new approved fasteners with in accordance with the following:

(A) 3/4 inch diameter flathead SAE J 429, Grade 5, Thiocol (Hucbolt) pin rivet fasteners or approved equal.

(B) Position one of the crane stop mounting fasteners to extend through the same existing hole from which a existing service bridge structural rivet was removed.

2.5.4 Painting (Coating) Crane Stops

New crane stops shall be sandblast cleaned to SSPC SP 10 surface condition and shall be given the same system of coatings as required for touchup coatings on the new assembled crane/undercarriage items. The topcoat paint color for new crane stops shall be safety yellow. Also apply a topcoat of paint (coating) to the heads of the new crane stop mounting fasteners after installation of new crane stops has been completed.

2.6 CRANE ROTATION LIMIT SWITCH

The Contractor shall determine the final dimensions of, and fabricate components of, the crane rotation limit switch system shown on the contract

drawings. If the new assembled crane superstructure is rotated so the boom faces upstream, the crane rotation limit switch lever arm is rotated by the strike plate and electrical interlock allows bulkhead hoisting. Also, if the new assembled crane boom is not facing upstream, this limit switch system disallows bulkhead hoisting. The Contractor shall determine the limit switch strike plate mount position(s) to weld-attach to points on the new assembled crane superstructure underside and shall determine the heights of fabricated components necessary for the limit switch lever arm to properly rotate. Details of the crane rotation limit switch system including dimensions and attachment points on the new assembled crane superstructure shall be summarized on the shop drawing(s) and submitted for approval.

2.7 CRANE TRAVEL CONTROL STATION

A Government furnished electric travel control station for the new assembled crane/undercarriage travel function shall be installed by the Contractor at each new assembled crane superstructure control stand. This travel control station replaces the existing hydraulic travel control system to be removed/abandoned from the existing crane superstructure as a part of this contract. The Contractor shall detail and fabricate the necessary mounting brackets required to install the new travel control station. Locations and methods of attachment shall be submitted for approval in shop drawing format. The location of each new travel control station shall not interfere with operator physical or visual access to other existing controls, gages, and indications. The travel control station location shall not interfere with operator line of sight through the cab windows and shall be located so as not to be a head-impact hazard to personnel seated at the control station.

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 15 - MECHANICAL

SECTION 15000

MACHINERY INSTALLATION

-- End of Section Table of Contents --

SECTION 15000

MACHINERY INSTALLATION

PART 1 GENERAL

1.1 SCOPE

This section covers the following work items that the Contractor shall perform (items listed in the recommended sequence order of work from first to last) in accordance with the contract requirements:

(A) Formulate proposed hoisting and rigging procedures, and submit for approval, for lifting the existing (to be salvaged) Government owned (Link Belt) crane superstructure components, the new Government furnished (Westmont) crane undercarriage components, and other related items all onto the existing dam service bridge railway.

(B) Remove the following existing items, as indicated on the drawings, from the existing locations and, as required, salvage and store on-site or dispose (off-site). Existing items that are required to be salvaged shall remain the property of the Government and shall be stored within the limits of the respective contract project work site. Existing items that are not required to be salvaged shall become the property of the Contractor and shall be removed, as soon as possible, from within the limits of the respective contract project work site and disposed by the Contractor at the Contractor's selected disposal site(s).

(1) Locomotive crane including: superstructure, boom, undercarriage, counterweights, bulkhead pickup beams, etc.

(2) Crane rail stops.

(3) Miscellaneous items as indicated on the drawings.

(C) Assemble the new Government furnished crane undercarriage components; and install all such assembled components upon the existing dam service bridge in accordance with the each manufacturer's installation procedures and the contract documents.

(D) Reassemble/assemble the existing (salvaged) Government owned crane superstructure components and all related new components; and install all such assembled components to the assembled new Government furnished crane undercarriage upon the existing dam service bridge in accordance with the each manufacturer's installation procedures and the contract documents.

(E) Perform initial startup and make all necessary operational adjustments such that the new assembled crane (existing superstructure, new undercarriage, accessories, etc.) is ready for required operational testing.

1.2 RELATED WORK OF OTHER SECTIONS

The following items of related work are covered under other sections.

1.2.1 Operational Testing and Calibration

Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING.

1.2.2 Contractor Furnished Items

Contractor furnished new items to be installed on the existing dam service bridge railway under this contract include, but not limited to, the following (as indicated on the drawings): crane boom support; power cable anchorage; crane superstructure tailswing limitswitch assembly; and cable reel flip-over device. All of the above items shall be in accordance with Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

1.2.3 Electrical Work

Section 16416 ELECTRICAL WORK.

1.3 REFERENCES

The publications listed below form a part of this technical section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.5	(1999D) Mobile and Locomotive Cranes
ASME B30.9	(1996B) Slings
ASME B30.17	(1998) Overhead and Gantry Cranes (Top Running, Single Girder, Underhung Hoist)
ASME B107.14M	(1994) Hand Torque Tools

COMMERCIAL ITEM DESCRIPTIONS (CID)

CID A-A-3132	Coating System: Epoxy Primer/Urethane Topcoat, For Minimally Prepared Atmospheric Steel

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (OSHA)

OSHA 29 CFR 1926.550	Cranes and Derricks

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

SSPC SP 1	(1991) Solvent Cleaning
SSPC SP 2	(1995) Hand Tool Cleaning
SSPC SP 3	(1995) Power Tool Cleaning
SSPC SP 10	(1994) Near White Metal Blast Cleaning

U.S. ARMY CORPS OF ENGINEERS ENGINEER MANUALS (EM)

1.4 GENERAL

1.4.1 Existing Government Owned Crane Superstructure Components

The existing Government owned crane superstructure components, to be salvaged and reused/reinstalled, were procured from Link Belt Corp., Lexington, Kentucky.

1.4.2 New Government Furnished Crane Undercarriage Components

The new Government furnished crane undercarriage components were fabricated by Westmont Industries, Santa Fe Springs, California. The new Government furnished crane undercarriage components were assembled for operational and acceptance testing at the manufacturer's facilities. Each crane undercarriage was then partially disassembled and packaged for shipping as shown on the drawings.

1.4.3 Manufacturer's Literature

The crane undercarriage manufacturer's operation and maintenance manuals contain assembly, installation, and startup instructions. This information in the manufacturers' operation and maintenance manuals shall form the basis of the Contractor's installation procedures. Complete copies of each manufacturer's operation and maintenance manuals will be made available for review at each contract project work site. One complete copy of the operation and maintenance manual will be furnished to the Contractor for the Contractor's use during the contract period.

1.4.4 Safety

All contract work shall be conducted in accordance with EM 385-1-1. A copy of EM 385-1-1 will be made available for review at each contract project work site. EM 385-1-1 is in general agreement with the ASME B30 Standards Committee regarding hoisting and rigging operations and gives certain requirements in addition to the ASME B30 Standards Committee requirements.

1.4.5 Hoisting And Rigging Procedures

The manufacturer's instructions do not necessarily present specific hoisting and rigging procedures for assembling, installing, or normal operational use of the crane undercarriage components. There will be no Government furnished or manufacturer furnished hoisting and rigging equipment supplied to the Contractor for the contract project work. The Contractor shall be responsible to formulate hoisting and rigging procedures as required and shall submit these hoisting and rigging procedures for approval. Hoisting and rigging procedures shall be in accordance with EM 385-1-1, OSHA regulations, and ASME B30 Standards Committee requirements. The Contractor shall supply all temporary supports, shoring, blocking, jigs, etc., and shall supply all hoisting and rigging equipment that is required for safe hoisting, assembly and installation of machinery.

1.4.6 Designated Crane Operator

After completion of required assembly and installation the existing (salvaged) crane superstructure components and the new crane undercarriage components, only a designated crane operator shall operate the Government's

new assembled crane (existing superstructure and new undercarriage). The Contractor shall propose through submitted evidence that one or more of its workers be qualified as a designated crane operator. The designated crane operator shall maintain the crane logbook and shall conduct the ASME B30 Standards Committee Frequent Inspections for the applicable Government furnished equipment. Each designated crane operator shall have the following qualifications:

(A) The designated crane operator shall have qualifications required in EM 385-1-1, paragraph 16.C.04.

(B) The designated crane operator shall meet the physical qualifications presented in EM 385-1-1, Section 1.C, and shall have had a physical examination performed no more than one year prior to the contact project work start date.

(C) The designated crane operator shall have passed a crane safety course of at least 24 hours class time duration encompassing the operation requirements presented in: EM 385-1-1 Appendix G; ASME B30.5; and the relevant OSHA regulations; all within the last three years.

(D) The designated crane operator shall have within the previous one year operated a crane similar to and equal to or larger than the capacity of the new assembled crane (existing superstructure and new undercarriage) required under this contract, with at least 50,000 pound maximum lift capacity (at minimum radius) and at least a 50 foot boom radius.

1.4.7 Crane Classification

The new assembled crane (existing superstructure and new undercarriage) does not fit under only one ASME B30 Standards Committee standard as the new assembled crane (existing superstructure and new undercarriage) is a combination of different classifications of hoists and cranes. The ASME B30 Standards Committee requirements for different crane classifications are similar to each other with respect to safety, inspection, maintenance, and operation. Under this contract the new crane undercarriage hoists (bulkhead and jib) are classified as ASME B30.17 overhead cranes. The following summarizes the crane/hoist systems of the new assembled crane (existing superstructure and new undercarriage).

1.4.7.1 Bulkhead hoists

Bulkhead hoists are a pair of cantilever underhung hoists, mechanically coupled together by a high speed synchronization shaft. The bulkhead hoist maximum lifting force occurs at the stall torque of the two hoist motors parallel connected through the synchronization shaft. The bulkhead hoist uses electronic MD-Totco loadcells, load indication, and load limiters.

1.4.7.2 Jib hoists

Jib hoists are two independent (not mechanically connected) lug-mounted cantilever hoists. For each jib hoist, the maximum lifting force occurs at stall torque of the motor. There are no electronic load limiters on the jib hoists.

1.4.7.3 Existing crane superstructure (upper crane)

The existing crane superstructure (upper crane) is a LinkBelt Model TC-78

pedestal mounted lattice boom crane and is equipped with an electronic Krueger load indication system.

1.4.8 Existing Crane Superstructure and New Crane Undercarriage Design Features

(A) Personnel Hoisting. The new crane undercarriage hoists (jib and bulkhead) and the existing crane superstructure are designed to lift personnel in compliance with OSHA and ASME B30 Standards Committee requirements. They all incorporate ratchet and pawl positive load-holding devices in addition to load-holding hoist brakes.

(B) Synchronized Hoisting. The controls for the new crane undercarriage hoists (jib and bulkhead) can be configured to operate all crane undercarriage hoists simultaneously from the one jib hoist pendant station. This feature is to provide synchronized lift of a four point suspension personnel work platform under the dam service bridge. The four point suspension personnel work platform is not a part of this contract.

(C) Two-Mode Crane Superstructure. The existing crane superstructure has a selector for two basic modes of operation: (a) freefall mode operation, and (b) power-down mode operation. The mode of operation is selected by a two position keyed switch located outside the operator cab as described in the crane operation and maintenance manual. For both modes of operation, a band brake at the existing crane superstructure's wire rope drum automatically engages whenever the winch control is released. In power-down mode, the existing crane superstructure winch's hoist motor remains clutched to the wire rope drum so that drum rotation speed is limited by the hoist motor speed, and a ratchet/pawl positive load-holding device automatically engages at the drum whenever the winch control is released. When the keyswitch is in power-down mode position, automatic engagement of the ratchet/pawl occurs whenever the band brake is engaged for personnel hoisting from the existing crane superstructure in compliance with OSHA 29 CFR 1926.550(g)(3)(I)(C), OSHA 29 CFR 1926.550(g)(3)(I)(F), and EM 385-1-1, paragraph 21.G.03.f. With the selector switch in freefall mode, the hoist motor is clutched to the hoist drum only when the hoist drum is raising the hookblock. In freefall mode with the hoist drum control at neutral, the wire rope drum load is held only by the band brake. In freefall mode for all control positions, the hoist drum positive load holding rachet and pawl device remains disengaged. The manufacturer's operation and maintenance manual contains written warnings against personnel hoisting despite this dual mode keyswitch because the applicable regulations prohibit personnel lifting with a live boom ("freefall") crane.

1.4.9 Approval To Operate

The new assembled crane (existing superstructure and new undercarriage) shall not be operated under power except under the direct supervision of the Contracting Officer and until written approval to operate it has been obtained from the Contracting Officer, as defined in Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING. Loads shall not be attached to any of loadblocks on the new assembled crane (existing superstructure and new undercarriage) until written approval to operate from the Contracting Officer has been obtained by the Contractor. Traveling the new assembled crane (existing superstructure and new undercarriage) along the dam service bridge railway and powered by the new assembled crane's (existing

superstructure and new undercarriage) travel drive system is prohibited until approval to operate has been obtained by the Contractor. The approval to operate the new assembled crane (existing superstructure and new undercarriage) will be granted only after the existing crane superstructure components have been reassembled/reinstalled and the new crane undercarriage components have been assembled and tested in the unpowered (de-energized) static state to the maximum extent practical. The installation procedures require test energizing of control circuits on the new crane superstructure and new crane undercarriage typically to test for proper control station output motions while performing wiring installation. For any energizing of travel control circuits before approval to operate, the respective drive output shall be disconnected, (i.e., wheels lifted, couplings uncoupled, etc.) as approved.

1.4.10 Documentation Responsibility

The Contractor shall record and compile all quality control data (including reports or checklists for tests, inspections, certifications, procedures, etc.) and report the results for each test item in the approved format. The Contractor shall retain the originals of all Contractor quality control documentation in chronological order and shall submit copies of the complete set of documentation for assembly/reassembly and installation/reinstallation work completed to-date before approval to operate will be granted. Approval to operate will be granted only after the Contractor quality control documentation package has been reviewed and approved by the Contracting Officer. The Contractor shall document items that are different that depicted on the contract drawings and reference drawings on a specially designated markup drawing set. This set of mark-up drawings shall be submitted at the end of this contract work, from which as-built drawings will be prepared by the Government at a later date. The markup drawing set and Contractor quality control documentation shall be retained by the Contractor at the contract project work site and shall always be available for inspection by the Government.

1.4.11 Workmanship Practices

The following general workmanship practices shall be followed at all times during the contract project work.

(A) The Contractor shall not make alterations to machinery or equipment, in order to ease installation, without the prior approval of the Contracting Officer. In the event that any existing items must be altered or removed to perform contract work, such alteration or removal must be approved in advance by the Contracting Officer. The Contractor shall document these items in the mark-up drawings or as approved.

(B) Any discrepancies or errors in Government furnished/owned items and information shall be reported to the Contracting Officer as soon as discovered. Corrections shall not be made without prior approval of the Contracting Officer. The Contractor shall document these items in the mark-up drawings or as approved.

(C) Adherence to dimensions, clearances, tolerances and methods as defined in the contract documents is mandatory, unless specific written approval of the variance is granted by the Contracting Officer. The Contractor shall document and report to the Government immediately any discrepancies between the reference drawings or contract drawings and the actual conditions.

(D) Protection of equipment. The Contractor shall perform protection and cleaning services as required during contract period and shall take proper steps to protect Government furnished/owned equipment being assembled/reassembled and also site equipment not involved in this contract work. Protect components at all times against the possible entrance of contaminants and precipitation. Partially disassembled or opened components and enclosures that are stored outdoors shall be protected under securely rigged waterproof tarps when left overnight or when exposed to potential precipitation conditions.

(E) Cleaning. During installation and after installation is complete, the Contractor shall perform a general cleanup of all grease, dirt, and spills that occur during this contract work. Cleaning materials including solvents, rags, detergents, brushes, etc., shall be clean and free of grit or dirt to avoid damage to surfaces of the work. Cleaning solvents shall be limited to nontoxic biodegradable products similar to Simple Green (or other cleaning product U.S.D.A. authorized for use in meat plants). The Contractor shall be responsible for any damage caused by misapplication of solvents or use of unsuitable cleaning materials.

(F) Pallets, cradles, and/or skids shall be used under all Government furnished/owned components to facilitate safe handling and to keep the equipment off of the ground and dry. Shoring and supports shall be non-marring (i.e., lumber or as approved) at the contact points with the equipment to avoid unnecessary damage to paint coatings.

(G) The logbooks for each of the Contractor's lifting equipment and the new assembled crane (existing superstructure and new undercarriage) logbook shall be maintained at all times during the contract period and shall be available for inspection by the Contracting Officer at all times during the contract period. The Contractor's lifting equipment shall at all times have current logbooks in the lifting equipment operator station and shall be available for inspection by the Contracting Officer.

(H) The finish coatings (paint) on the new Government furnished crane undercarriage components are to be considered new but could become damaged during handling, assembly, installation, testing, and/or operation activities. The Contractor shall be responsible to repair all damaged areas of finish coatings (paint) on the new crane undercarriage regardless of the source of the damage and at no additional cost to the Government. The Contractor shall also be responsible to perform touchup coating (painting) on the existing dam service bridge for attachment of power cable flip-over device, crane stops, and rail ground straps. Coating (paint) repair procedures shall use the same coating (paint) brands, formulations, and colors as the existing coating (paint) systems. The manufacturer's coating (paint) procedures for the new Government furnished crane undercarriage components shall be complied with by the Contractor. All existing coating (paint) systems are defined below in PART 3 - EXECUTION of this technical section. Coating (paint) repair application shall be the same as the new crane undercarriage manufacturer's touchup coating (painting) procedures except that sandblast clean surface preparation and spray application will not be required. Coating (paint) repair procedures shall also be in accordance with the coating (paint) manufacturer's written instructions and/or recommendations, as approved.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Contractor's Lifting Equipment; GA.

All of the Contractor's lifting equipment shall be constructed, operated, and maintained in compliance with the applicable ASME B30 Standards Committee requirements. The Contractor shall submit a descriptive list of its hoisting and rigging equipment to include make, model, size and load ratings. All hoisting and rigging equipment (including slings, hooks, attachments) shall be manufactured, identified, tested, and used in accordance with ASME B30.9 (or other ASME B30 Standards Committee standard as applicable). The Contractor shall submit descriptions of the lifting equipment (make, model, rated load and radius curves for boom cranes, etc.) that it proposes to utilized for the contract project work. The intended use(s) for the lifting equipment shall be included in the lifting procedures submittals. Submittals shall be sufficiently detailed to verify that the equipment complies with the current safety regulations of: OSHA, ASME B30 Standards Committee, and EM 385-1-1. For all of the Contractor's lifting equipment (cranes, hoists, hoisting/rigging equipment, etc.) the Contractor shall submit copies of the last ASME B30 Standards Committee Periodic Inspection report (as applicable). The Contractor shall also submit copies of the last two ASME B30 Standards Committee Frequent Inspection reports for the time just before the work of this contract to verify continuous compliance. The Contractor is not liable for the design or the adequacy of lifting apparatus furnished with the Government's equipment. The Contractor shall note where Government furnished/owned lifting apparatus shall be incorporated in the Contractor's lifting procedure submittals.

Special Tools; GA.

Submit catalog cuts with dimensioned drawings of special tools required to be furnished by the Contractor, to the extent required to illustrate that these requirements have been met.

Torque Wrenches; GA.

Submit catalog cuts, name, model number, and evidence that the torque wrenches conform to ASME B107.14M. The Contractor shall submit information on all the types of torque wrenches and accessories required to fit all fasteners where torque values are required.

Miscellaneous Products; GA.

Submit catalog cuts for sealants, thread locking compounds, anti-seize coatings, treatments, touchup paint, cleaning agents, and other Contractor furnished supplies required to complete the contract project work.

Coatings (Paints) Data; GA.

The Contractor shall submit data for the coatings (paints) to be used for work under this contract, including the paint manufacturer product literature, specifications, colors (chip chart), and (after procurement)

copies of dated purchase orders.

Colors For Repair Coating (Paint); GA.

The Contractor is responsible to identify touchup topcoat colors to use the same colors as the existing coatings (paint). The Contractor shall identify the color codes from the respective paint manufacturers and/or from the data in the operation and maintenance manual in order to match the existing coatings, and shall submit the color designations proposed for use.

SD-04 Drawings

Shop Drawings; GA.

Shop drawings shall be submitted for all items that are fabricated by the Contractor, and shall describe all dimensions and fabrication details. The shop drawings shall show type, grade, and class of required materials where appropriate as required in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Where materials are standard stock products of manufacturers, catalog cuts including specifications and complete descriptive data shall be submitted.

SD-07 Schedules

Installation Schedule; GA.

The Contractor shall prepare and submit a schedule of work for assembly/reassembly and installation/reinstallation of the existing (salvaged) Government owned crane superstructure components and the new Government furnished crane undercarriage components. The schedule shall list all major assembly/reassembly and installation/reinstallation work items, inspections, and submittal items. The schedule shall include proposed dates for Government witnessed lifts, procedures, and tests. The schedule shall incorporate turnaround time for submittals that affect the work schedule. The schedule shall become the template for all work of, and related work to, this technical section.

SD-08 Statements

Lifting Procedures; GA.

The Contractor shall submit lifting procedures as required for each lift of Government furnished/owned components weighing more than 1,000 pounds that shall be lifted by Contractor equipment during this work. Parts of lifting procedures that are common to all lifts may be submitted once instead of repeating data in all lift procedure submittals. Compile all documentation for all completed lift procedures in chronological report form and submit it as a complete lift report package at the end of this contract work.

Quality Control Procedures; GA.

The Contractor shall prepare and submit proposed written quality control procedures for required critical items of installation work. The quality control procedures shall formalize verification of required critical work items and have two persons independently certify (by initialing and dating) that the work items are properly performed. Procedures shall be formulated for at least the following items:

(A) Contractor quality control inspection of Government furnished

equipment.
(B) Coupling installation and alignment.
(C) Fastener tensioning (torque) procedures.
(D) End truck to carriage frame alignment procedures.
(E) Lubrication of the new assembled crane (existing superstructure and new undercarriage).
(F) Addition of hydraulic fluids to the new assembled crane (existing superstructure and new undercarriage).
(G) Hydraulic travel brake inspection / bleeding procedures and witness test per paragraph - TRAVEL BRAKE SYSTEM
(H) Synchronization shaft/bulkhead hoist hookblock alignment procedures in accordance with paragraph - BULKHEAD HOIST SYNCHRONIZATION SHAFT AND PAWL/RATCHET GEARS
(I) Bulkhead hoist pawl/ratchet alignment procedures in accordance with paragraph - BULKHEAD HOIST SYNCHRONIZATION SHAFT AND PAWL/RATCHET GEARS

Quality control procedure format shall be checklists of items with blanks after each item for certification initials and dates. Quality control procedures and checklists shall be inserted sequentially into the installation procedures where the quality control item occurs. All completed quality control procedure sheets shall be submitted to the Contracting Officer at the end of work. The Contractor quality control procedures shall also form a part of the procedures defined in Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING.

SD-09 Reports

Contractor's Lifting Equipment Logbooks; FIO.

For the Contractor's lifting equipment used in the contract project work, the ASME B30.5 logbooks, as applicable, shall be kept at the lifting equipment operator station and shall be available for inspection by the Contracting Officer at all times.

SD-18 Records

Designated Crane Operator; GA.

Submit copies of crane operator qualification records for the persons proposed to be the designated crane operator(s) of the new assembled crane (existing superstructure and new undercarriage). The crane operator test qualification records shall include the following: testing agency name and address; training description; date of certification; and experience records for relevant cranes operated.

As-Built Records; GA.

The Contractor shall designate and maintain one complete set of contract drawings and reference drawings expressly to document any differences noticed between the actual (as-built) condition and that indicated on the contract drawings or reference drawings. These differences shall be noted directly on the drawings with sketches, corrections, and/or written notes as appropriate. These drawings will be used by the Government to produce as-built drawings after this contract work is complete. As-built drawings shall indicate all lube fitting locations as required. These drawings shall be always available for inspection by the Contracting Officer, and shall be turned over to the Government at the end of this contract work.

PART 2 PRODUCTS

2.1 TEMPLATES, TOOLS, AND INSTRUMENTS

All necessary equipment needed for work of this technical section shall be furnished by the Contractor. The Government will not furnish any templates, tools, and/or instruments unless such item(s) were included with the Government furnished items required for this contract. Manufacturer furnished installation tools may be used by the Contractor during the contract project work and shall remain/become property of the Government when contract project work has been completed. Special tools required to be furnished to the Government by the Contractor may also be used by the Contractor for contract project work, and shall be turned over to the Government in undamaged condition when contract project work has been completed.

2.2 HOISTING AND RIGGING

All hoisting and rigging equipment needed for completing the contract project work shall be supplied by the Contractor. All lifting apparatus shall comply with ASME B30 Standards Committee requirements as applicable, with load capacities indicated and current labeling as required. All lifting apparatus shall be described in detail where lift procedures are required. All lifting apparatus shall conform to the applicable requirements of: ASME B30 Standards Committee, EM 385-1-1, and OSHA.

2.3 FIRE EXTINGUISHERS

In accordance with ASME B30.5, paragraph 5-3.4.9 and ASME B30.17, paragraph 17-1.5.5, the Contractor shall furnish and install two identical rechargeable carbon dioxide fire extinguishers and outdoors rated cabinets (enclosures) and shall mount them on the handrails outboard of the stairs at the ends of the new crane undercarriage as approved. Fire extinguishers shall be rated 10BC operable in the temperature range - 40 oF to + 120 oF. Fire extinguishers shall be Underwriters Laboratories, Inc. (UL) listed, shall meet U.S. Department of Transportation (DOT) requirements, and shall be U.S. Coast Guard (USCG) approved. Each fire extinguisher shall be mounted in Contractor furnished weatherproof corrosion-resistant cabinet designed for mounting out-of-doors on vehicles, with breakable front access panel or other similar protective housing construction. Mounting bracket for extinguishers themselves shall also be designed for vehicle (vibration) mounting. The fire extinguishers and enclosures, all from/by the same manufacturer, shall be furnished by the Contractor. All moving parts of the fire extinguishers and hose fittings shall be corrosion resisting construction, with aluminum cylinders and brass valves. Extinguishers shall have discharge hoses and seals to indicate if fill cap or actuator lever has been tampered with or extinguisher has been used.

2.4 CONSUMABLES

During contract period the Contractor shall supply all consumables for assembly/reassembly, installation/reinstallation, startup, operation, and maintenance of the components for the new assembled crane (existing superstructure and new undercarriage), including but not limited to the following: lubricants, hydraulic fluids, threadlocking compounds, coatings, cleaning agents, welding materials, tarps, etc. All consumables shall be as called out in the respective manufacturer's operation and maintenance manuals and as otherwise required in the contract documents.

PART 3 EXECUTION

3.1 GENERAL

Assembly/reassembly and installation/reinstallation of the existing (salvaged) Government owned crane superstructure components and the new Government furnished crane undercarriage components shall be in accordance with written procedures that have been submitted and approved prior to commencing such procedures. These procedures shall be in accordance with the manufacturer's written instructions and the contract requirements. The procedures shall define the content and sequence of all work that the Contractor shall perform under this contract. The procedures shall state where quality control verification and/or witness tests are to be performed. The procedures shall contain benchmarks such as checklists, or fill-in-the-blank data sheets at critical steps to formally document the quality control of critical installation items and related submittals. The assembly and installation procedures shall form the basis for defining work progress, work milestones, and submittal turnaround time. The Contractor's work shall be in accordance with the new crane undercarriage manufacturer's instructions and the existing crane superstructure manufacturer's instructions. Copies of these documents are available for the contractor's inspection at each contract work site. Additionally the Contractor shall perform the verifications, measurements, inspections, and adjustments as required in this technical section.

3.2 CRANE UNDERCARRIAGE INSTALLATION

3.2.1 General

The Contractor shall inspect the following items which are all to be furnished installed by others: truck braces (Part No. C1-1500-30); upper rod bearings (Part No. C1-1100-20); lower rod bearings (Part No. C1-1100-21); and their clevis pin assemblies. These components were set to align the end trucks to the carriage frame weldment in the factory, but the alignment may have been lost during shipping. The Contractor shall adjust the new crane undercarriage truck braces such that the end trucks are each measured to be vertical to within $\pm$ 1/3 degree, with measurements made using the digital level in accordance with Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING. The end truck alignment/misalignment measurements shall be documented in the presence of the Contracting officer. The rod bearings have locknuts to secure the truck brace rotation relative to the rod bearings (metric M36 by 3 threads). The Contractor shall supply the necessary torque wrench adaptors and apply 150 foot-pounds torque to the truck brace locknuts (on the rod bearings) in accordance with the approved tensioning procedure after all related adjustments are completed.

3.2.2 Lifting

A lifting procedure and submittal is required for hoisting the carriage frame weldment - end trucks - travel drive assembly from its storage position onto the existing dam service bridge railway. The new Government furnished crane undercarriage is also furnished with three lift tabs (not detailed) designed to attach to the mount boltholes used for the turret gear weldment (Part No. C1-1500-10). The Contractor shall use the turret gear bolts (Part No. C1-1100-26) from the turret gear weldment (Part No. C1-1500-10) to install and use the Government furnished lift tabs. The Contractor shall install the turret gear weldment and torque the turret

gear bolts after the lift is completed. The Contractor is responsible to furnish the necessary lifting sling and lift procedure for the lift attachment methods selected. The lifting procedure shall protect the end truck mount bearings (Part No. Y1-2000-90) from damage due to excessive motion. Due to excessive "pick weight", subsequent assembly shall be performed upon the dam service bridge railway. The Contractor is responsible to protect the coatings on the dam service bridge from damage during assembly work by erecting temporary plywood floors over the assembly area on the dam service bridge. Place the attached wheel chocks (Part No. C1-1100-48) against the wheels before disconnecting the lifting sling on the existing dam service bridge.

3.2.3 Rail Grabbers and Truck Rollers

The Contractor shall inspect the rail grabbers (Part No. Y1-2200-10) and the rail grabber mount bolts (Part No. C1-1200-20). Mount and secure the rail grabbers to the end trucks. Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. The Contractor shall inspect: the guide rollers (Part No. C1-1200-36), guide roller axles (Part No. Y1-2000-70), and axle nuts (Part No. C1-1200-11). Mount and secure the guide rollers to the end trucks. Rotate the guide roller axle eccentrics to position the rollers equally at 0.125 inch clearance to the rail head. Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.2.4 Travel Gearmotor Assemblies and Drive Couplings

The Contractor shall inspect the travel gearmotor assemblies (Part No. C1-1100-16) and the drive couplings (Part Nos. C1-1100-13 & C1-1100-14), which are to be furnished installed and aligned to the underside of the carriage frame using the gearmotor mount bolts (Part Nos. C1-1100-22 & C1-1100-23) and shims (Part Nos. C1-1100-32 & C1-1100-36). The travel gearmotor assemblies and drive couplings do not require realignment. Verify torque on the gearmotor mount bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. List locations of lubrication fittings for the drive assembly, including gearmotor, on copies of the relevant drawings. Lubrication points shall be as indicated on a copy of ref. dwg. C1-1200. The end truck pivot bearings (Part No. Y1-2000-90) are maintenance-free non-lubricated type. Perform and document required operation and maintenance lubrication procedures for the drive couplings, end trucks, and the hoist gearmotors.

3.2.5 Counterweights

The Contractor shall inspect and verify location(s) and quantity of the counterweights (as indicated on ref. dwgs. C1-1100 and C1-1400). Document the quantities and locations of the installed counterweights relative to the contract drawings. Verify torque on the counterweight mounting bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.3 RIGHT BULKHEAD HOIST ARM

The right bulkhead hoist arm (Part No. B0-1200) will be furnished as a subassembly for installation to the carriage frame weldment by the Contractor. The right bulkhead hoist equipment is to be furnished already installed to the hoist arm as follows:

Description	Part No(s).
Hoist drive unit	(B1-1110)
Trolley assembly	(B2-1000)
Floor panels	(B4-1000)

The bulkhead hoist equipment to be installed by the Contractor onto the right hoist arm are as follows:

Description	Part No(s).
Wire rope assembly	(B6-1000-1)
Hookblock	(B0-1100-10)
Stairway	(E1-1200, E1-1300, & E1-1400)
Stabilizer frame	(B3-1000 & B3-2000)
Handrail	(B5-1000, B5-2000, & E1-1500)
Floodlights	-N/A-
Anti-two-block	(B0-1200-7)
Load cell	(B0-1200-8)
Bulkhead hoist motor and bulkhead hoist gear reducer	(B1-4100-1 & B1-4100-3)

3.3.1 Lifting Bulkhead Hoist Arm Assembly

Lift the bulkhead hoist arm assembly and position it on the carriage frame in accordance with the approved lifting procedure. The bulkhead hoist arm is to be furnished with lifting shackles (Part No. B0-1200-16). Document the lifted load weight of the lifted assembly for the right bulkhead hoist arm assembly. Mount and secure right bulkhead hoist arm assembly using the bulkhead hoist arm mount bolts (Part No. G1-1000-14) in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.3.2 Lubrication

Remove the floor panels (Part No. B4-1000) from the bulkhead hoist assembly. List lubrication fittings and locations for all of the bulkhead hoist arm components on copies of the relevant drawings. Lubrication points are on the hoist drive unit (Part No. B1-1110) and the trolley assembly (Part No. B2-1000). Perform and document the required operation and maintenance lubrication procedures for the drive couplings and the hoist gearmotors.

3.3.3 Righthand Stairway and Handrail

Unpack and inspect the righthand stairway (Part Nos. E1-1200, E1-1300, & E1-1400) and the handrail (Part No. E1-1500). Mount and secure the stairway to the left hoist arm and the handrail to the stairway using the stairway mount bolts (Part No. G1-1000-12) and stairway handrail mount bolts (Part No. G1-1000-11). Refer to ref. dwg. B0-1200. Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.3.4 Bulkhead Hoist Arm Handrails

Unpack and inspect the bulkhead hoist arm handrails (Part Nos. B5-1000 & B5-2000) and righthand/lefthand hoist handrail mount bolts (Part No.

B0-1200-13). Mount the handrails to the bulkhead hoist arm using the fasteners supplied. Torque the mount bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.3.5 Bulkhead Hoist Gear Reducer

The Contractor shall inspect the right hand bulkhead hoist gear reducer (Part No. B1-4100-3) which is installed to the right hand bulkhead hoist subassembly (Part No. B0-1200). The gear reducer (Part No. B1-4100-3) is furnished installed onto the bulkhead hoist and the hoist motor (part of Part No. B1-4100-1) is furnished decoupled from the gear reducer. The Contractor shall perform a visual inspection of the motor-to-reducer coupling (motor-to-reducer coupling and its fasteners not listed in the Bill of Materials) and shall afterwards connect the motor to the reducer. The Contractor is not required to install the motor-to-reducer coupling, but shall be responsible to lubricate the coupling and document that these coupling fasteners have been tightened in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. The gear coupling (Part No. B1-1110-42) halves are furnished press-fitted respectively to the hoist drum shaft and reducer output shaft. The Contractor shall lubricate the gear coupling, connect the halves of the gear coupling with the furnished fasteners (fasteners not listed on the Bill of Materials), and align this coupling in accordance with the approved coupling alignment procedures. Shims (Part No. Y1-1700-30) for aligning the gear coupling (Part No. B1-1110-42) are furnished with the gear reducer and shall be used to obtain required alignment. Verify that the gearmotor mounting bolts (not listed in the Bill of Materials; to be listed by the Contractor) are tightened in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Perform and document required lubrication procedures for the drive couplings and the hoist gearmotors.

3.3.6 Bulkhead Hoist Motor Support

Install the bulkhead hoist drive motor support (Part No. B4-2000-100) as follows. The Contractor is responsible to provide and document a preload upward under the bulkhead hoist motor from the hoist drive motor support using the motor shims (Part No. B4-2000-1). With the hoist drive motor support mount bolts tightened, install as many shims as possible by hand between the motor mount surface and the motor support. Loosen the mount bolts, and install one more shim at each motor mount bolt position. Retighten the fasteners and torque them in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4 LEFT BULKHEAD HOIST ARM

The left bulkhead hoist arm (Part No. B0-1100) is to be furnished as a subassembly for installation to the carriage frame weldment by the Contractor. The bulkhead hoist equipment to be furnished already installed to the left hoist arm is as follows:

Description	Part No(s).
Hoist drive unit	(B1-1110)
Trolley assembly	(B2-1000)
Floor panels	(B4-1000)
Brake control stand	(B7-1000-10)

Cable reels	(B0-1100-14 & B0-1100-15)

The bulkhead hoist equipment to be installed by the Contractor onto the left hoist arm are as follows:

Description	Part No(s).
Wire rope assembly	(B6-1000-1)
Hookblock	(B0-1100-10)
Stairway	(E1-1200, E1-1300, & E1-1400)
Stabilizer frame	(B3-1000 & B3-2000)
Handrail	(B5-1000, B5-2000, & E1-1500)
Floodlight	-N/A-
Anti-two-block	(B0-1100-12)
Load cell	(B0-1100-17)
Load indication	(B0-1100-16)
Pendant station mount	(Y1-1600)
Pendant station	(B0-1100-13)
Bulkhead hoist motor and gear reducer	(B1-4100-1 & B1-4100-3)

3.4.1 Bulkhead Hoist Arm Assembly

Lift the bulkhead hoist arm assembly and position it on the carriage frame in accordance with the approved lifting procedure. The bulkhead hoist arm is to be provided with lifting shackles (Part No. B0-1100-30). Document the lifted load weight of the lifted assembly for the right bulkhead hoist arm assembly. Mount and secure right bulkhead hoist arm assembly using the bulkhead hoist arm mount bolts (Part No. G1-1000-14) in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.2 Lubrication

Remove the floor panels (Part No. B4-1000) from the bulkhead hoist assembly. List lubrication fittings and locations for all of the bulkhead hoist arm components. Lubrication points are on the hoist drive unit (Part No. B1-1110) and the trolley assembly (Part No. B2-1000).

3.4.3 Pendant Reel

Unpack and inspect the pendant reel (Part No. B0-1100-13), pendant reel bracket (Part No. Y1-1600) and pendant reel mount bolts (Part Nos. B0-1100-23 & B0-1100-28). Refer to Section 16416 ELECTRICAL WORK for related installation requirements. Lift pendent reel and pendent reel bracket and position them along side the left hoist arm in accordance with ref. dwg. B0-1100. Mount and secure pendant reel assembly using the mounting hardware supplied. Torque the mounting bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.4 Brake Control Stand Assembly

Inspect the brake control stand assembly (Part No. B7-1000-10) and brake control stand mount bolts (Part No. B0-1100-11) which are furnished preinstalled. Verify each mounting bolt torque is in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.5 Lifting Beam

Inspect the lifting beam control stand (Part No. B4-1000-30), control stand mount bolts (Part No. B0-1100-27), lifting beam cable reels (Part Nos. B0-1000-14 & B0-1000-15), and lifting beam cable reel mount bolts (Part No. B0-1100-26)(preinstalled). Mount the components of the lifting beam controls along side the left hoist arm in accordance with ref. dwg. B0-1100 and secure using the hardware supplied. Verify each mounting bolt torque is in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. The Contractor shall attach the wire ropes of the cable reels to the pickup beam actuator lever after the pickup beam is attached after the work of this section is complete.

3.4.6 Lefthand Stairway

Unpack and inspect the lefthand stairway (Part Nos. E1-1200, E1-1300, & E1-1400), and the lefthand stairway handrail (Part No. E1-1500). Mount and secure the stairway to the left hoist arm and the handrail to the stairway using the stairway mount bolts (Part No. G1-1000-12) and stairway handrail mount bolts (Part No. G1-1000-11). Refer to ref. dwg. B0-1100. Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.7 Handrails

Unpack and inspect the bulkhead hoist arm handrails (Part Nos. B5-1000 & B5-2000) and hoist handrail mount bolts (Part No. B0-1100-24). Mount the handrails to the bulkhead hoist arm using the fasteners supplied. Torque the mount bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.8 Lefthand Bulkhead Hoist Gear Reducer

Unpack and inspect the lefthand bulkhead hoist gear reducer (Part No. B1-4100-3) which is installed to the left hand bulkhead hoist subassembly (Part No. B0-1100). The gear reducer (Part No. B1-4100-3) is furnished installed onto the bulkhead hoist and the hoist motor (Part of B1-4100-1) is furnished decoupled from the gear reducer. Perform a visual inspection of the motor-to-reducer coupling (motor-to-reducer coupling and its fasteners not listed in the Bill of Materials) and shall afterwards connect the motor to the reducer. The Contractor is not required to install the motor-to-reducer coupling, but shall be responsible to lubricate the coupling and document that these coupling fasteners have been tightened in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. The gear coupling (Part No. B1-1110-42) halves are furnished press-fitted respectively to the hoist drum shaft and reducer output shaft. Lubricate the gear coupling, connect the halves of the gear coupling with the furnished fasteners (fasteners not listed on the Bill of Materials), and align this coupling in accordance with the approved coupling alignment procedures. Shims (Part No. Y1-1700-30) for aligning the gear coupling (Part No. B1-1110-42) are furnished with the gear reducer and shall be used to obtain required alignment. Verify that the gear reducer mounting bolts (not listed in the Bill of Materials; to be listed by the Contractor) are tightened in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.4.9 Hoist Drive Motor Support

Install the hoist drive motor support (Part No. B4-2000-200) as follows. The Contractor is responsible to provide and document a preload upward under the bulkhead hoist motor from the hoist drive motor support using the motor shims (Part No. B4-2000-1). With the hoist drive motor support mount bolts tightened, install as many shims as possible by hand between the motor mount surface and the motor support. Loosen the mount bolts, and install one more shim at each motor mount bolt position. Retighten the fasteners and torque them in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.5 SAFETY NET

Inspect the safety net (Part No. E1-1600) and fasteners (Part No. G1-1000-15). Verify that the safety net suspension components (eyebolts, nuts, chain connection links)(Part Nos. E1-1600-1, E1-1600-2, & E1-1600-3) are all uniformly loaded and secure. Lift the safety net (approximate weight: 1,070 pounds) onto the safety net brackets (Part No. B4-1000-20) between the bulkhead hoist arms in accordance with the approved lifting procedure. Mount and secure using the hardware supplied. Torque the mounting bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.6 TRAVEL BRAKE SYSTEM

The travel brake hydraulic system (Part No. K1-1100) is to be furnished preinstalled and without hydraulic fluid, and the flexible hoses (Part Nos. K1-1100-5 & K1-1100-14) are connected. The brake control stand (Part No. B7-1000) is to be furnished preinstalled as shown but is not adjusted. The Contractor shall insure that the travel brake hydraulic system is installed in accordance with the manufacturer's operation and maintenance manual. The Contractor shall verify that hydraulic hardline tubing is properly secured along its entire length(s) and shall reconnect the hydraulic flexible hoses and brake control stand as required. The Contractor shall inspect and perform all rework of connections required in order to provide that the hydraulic system is leak tight (both before and after acceptance testing). All hydraulic connections disassembled or assembled by the Contractor shall have sealant applied similar to Loctite Pneumatic Hydraulic Sealant 545. Surface preparation and sealant use shall be as prescribed by the sealant manufacturer.

3.6.1 Hydraulic System Access

Match mark the location and orientation of any decking and grating (Part No. C1-1600) assembled to the crane undercarriage that is required to be removed and reinstalled for installation work access to the hydraulic tubing and hoses of the travel brake system (Part No. K1-1100). Remove the gratings and covers as required to obtain a visually clear line of sight to the entire travel brake hydraulic system (Part Nos. B7-1000 & K1-1100). The hydraulic power unit (Part No. C1-1100-15) is furnished preinstalled on top of the right side travel gearmotor's reducer bracket and provides power assist to the travel drive brakes. The Contractor shall inspect that the hydraulic power unit is intact and complete.

3.6.2 Hose Guards

Verify that the hose guard (Part No. K1-1100-15) flat armor shroud is preinstalled on the flexible hoses on the braking system. Verify that hose

guards are installed continuous over the length of a given flexible hose, with no splices or splits along the installed length.

3.6.3 Testing Hydraulic Brake System

Fill the hydraulic system with the manufacturer's specified hydraulic fluid (refer to the operation and maintenance manual). Bleed and adjust the brakes and controls as required to obtain proper actuation of both travel brakes. The Contractor shall demonstrate the hydraulic system bleeding procedure and shall also demonstrate proper hydraulic system function as an inspection steps to be witnessed by the Contracting Officer. Testing of the hydraulic travel drive brake system by operation from the brake control stand and demonstration of automatic function shall be performed before approval to operate is granted. Replace the grating after the travel brake hydraulic system inspection has been completed and function has been verified. The Contractor shall use jacking/cribbing under the end truck assemblies in order to raise the end truck wheels from rail contact and demonstrate/test brake function in place.

3.7 POWER CABLE REEL SUBASSEMBLY

The Contractor shall inspect the power cable reel subassembly (Part Nos. CR-1020-100, CR-1021-100, & CR-1031-100) which shall be furnished attached to the carriage frame subassembly in accordance with ref. dwg. G1-1000. At the Contractor option, the Contractor may: (1) connect the power cable reel subassembly structurally before lifting the new crane undercarriage up to the top of the dam service bridge; or (2) lift the new crane undercarriage and the power cable reel subassembly separately onto the service bridge and then assemble same on the top of the dam service bridge. The Contractor proposed selected method shall be included in its "Lifting Procedures" submittal covered in paragraph - SUBMITTALS. Check torque on the cable reel mount bolts (Part No. G1-1000-13) in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Refer to Section 16416 ELECTRICAL WORK for related wiring requirements.

3.8 BULKHEAD HOIST SYNCHRONIZATION SHAFT AND PAWL/RATCHET GEARS

The synchronization shaft assembly (Part No. E1-1100) mechanically connects the left and right bulkhead hoists to synchronize the relative lifting block (Part No. B0-1100-20) elevations and to synchronize the left and right side ratchet/pawl systems (see reference drawings B1-1100, sheets 1, 2, and 3). It is imperative that the left and right pawls (Part No. B1-1110-6) both engage and disengage from the respective ratchet gears (Part No. B1-1110-3) synchronously, and also that the pawls bear loads equally on the respective ratchet gears. This requires that the left and right bulkhead hoist drums (Part No. B1-1110-2) and ratchet gear teeth must be precisely aligned mirror image with each other. The ratchet/pawl synchronization procedure and bulkhead hoist hookblock synchronization procedure are mechanically linked together by the ratchet gear of the drum. Adjustments to obtain required ratchet/pawl synchronization shall require recheck of any previous bulkhead hoist hookblock synchronization, and vice versa. The Contractor is responsible to obtain simultaneously both of the required synchronizations through iterative process as required. Initial adjustment to align the left and right side hoist pawl/ratchet systems is achieved through disassembly, adjustment, and reassembly of the synchronization shaft couplings to exactly align the left and right drum assemblies. Pawl motion synchronization is done through trial energizing of the pawl actuators (Part No. B1-1110-35) with adjustment at the pawl

actuator mount bracket (Part No. B1-1110-19). The Contractor shall disassemble and index the couplings on the synchronization shaft as many times as may be necessary in order to achieve the required alignment tolerances. The Contractor's procedure to obtain and verify that the left and right pawl/gear systems are aligned as required shall be submitted for approval. Coupling installation and coupling alignment shall be in accordance with the Contractor's procedures as approved by the Contracting Officer. The Contractor's procedures to verify that the left and right side bulkhead hoist hookblocks are aligned through the synchronization shaft, as required, shall be submitted for prior approval.

3.8.1 Synchronization Shaft

The Contractor shall remove and reinstall the synchronization shaft cover assembly (Part No. E1-1101) as required to inspect, assemble, and align the synchronization shaft components (Part No. E1-1100). The Contractor shall inspect the components of the synchronization shaft assembly (Part No. E1-1100) and components of the synchronization shaft cover (Part No. E1-1101). The synchronization shaft assembly is furnished only partially assembled and none of the synchronization shaft couplings are to be aligned as furnished. The center section of the synchronization shaft assembly (Part Nos. E1-1100-1, E1-1100-2, & E1-1100-D) is furnished assembled to the carriage frame but shall be assumed to require realignment by the Contractor. The Contractor shall document that synchronization shaft components furnished loose are furnished match-marked by the manufacturer for installation by the Contractor in their intended locations. The u-joint couplings (Part No. E1-1100-4) are keyed with clearance fit to the respective synchronization shafts and each u-joint is further secured with two setscrews at 90 degrees apart. The Contractor shall propose and follow a Contractor quality control procedure in order to ensure that the u-joint couplings are secured. The Contractor shall align all synchronization shaft couplings (Part Nos. E1-1100-3 & E1-1100-4) as approved, except that alignment of the universal joints (Part No. E1-1100-4) is not required other than verifying the phase orientations. The flex-rigid couplings (Part No. E1-1100-3) are to be furnished pressed onto the respective shafts but not aligned. Align the shafts at the flex-rigid couplings (Part No. E1-1100-3) so that the offset is less than 0.070 inch and angular misalignment is less than 0.5 inch, shimming as necessary. The Contractor shall supply all shims to be installed under the spherical roller bearings (Part No. E1-1100-1) that may be required to align the couplings. Torque the bearing mounting bolts and the coupling bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Install the top halves of the synchronization shaft covers and secure them in place.

3.8.2 Pawl and Ratchet Gear System Alignment Tolerance

The Contractor shall remove the pawl system covers (Part Nos. B1-1110-40 and B1-1110-41) to inspect and adjust the pawl systems. These covers shall be removed during startup testing and during acceptance testing in order to allow close observation of the pawl system function. The bulkhead hoist is not designed so that the pawl bears firmly against the ratchet gear flank whenever it is deenergized although firm engagement may occur. More likely there will be a lateral air gap between the pawl head and the ratchet gear tooth flank. The tolerance control measurement for pawl/ratchet gear alignment shall be the span between the pawl head and the mating ratchet gear tooth flank. The difference in this measurement (comparing left to right bulkhead hoists) shall be less than 0.1 inch for any static condition. This tolerance measurement shall be taken multiple times during

acceptance testing at the discretion of the Contracting Officer.

3.8.3 Effect on Lifting Block Vertical Alignment

The required bulkhead hoist lifting block vertical alignment tolerance is shown on drawing No. M-LG-57/115. The ratchet/pawl synchronization once set will prohibit any gross system adjustments to obtain the lifting block vertical alignment. The only adjustment available for lifting block vertical alignment is the threaded connection at the load cell end of the hoist wire ropes. The Contractor shall adjust the wire rope threaded connection as feasible in order to obtain the required lifting block vertical alignment as shown. The Contractor shall report the obtained vertical alignment based on the limited adjustment capability.

3.9 WIRE ROPE

Install wire rope (Part No. B6-1000-1) to bulkhead hoists. Remove the floor panels (Part No. B4-1000) and drive closures (Part Nos. Y1-1700-70 & Y1-1700-80) from the bulkhead hoist arms. The Contractor shall inspect the wire rope assemblies (Part No. B6-1000-1) and wire rope mount hardware (Part Nos. B6-1000-2 & B6-1000-3) before reeving. The following steps shall be followed:

(A) Connect the power cable reel to the power junction box as required in Section 16416 ELECTRICAL WORK.

(B) Turn on the hoist disconnect switch "DISC-2". Verify that all other disconnect switches are off.

(C) Verify that the synchronization shaft is not connected to the bulkhead hoist gear reducers. Verify the operation of both bulkhead hoist motors in the correct directions.

(D) Verify that each level winder functions properly and that the levelwinder (at NOTE 2 on ref. dwg. B1-1110) is set at the end of the drum with the cable slot in the flange (flange which connects to rope clamp (Part No. B1-2110-30)). Turn off the hoist disconnect switch.

(E) Unpack and inspect the lifting blocks (Part No. B0-1100-20). Place one of them under each bulkhead hoist arm under the trolley assembly (Part No. B2-1000). Verify that the sheaves and pivots on the lifting block assemblies are all functional and properly lubricated. Securely support the lifting blocks in the upright position (installed orientation) so that the wire ropes can run freely through them while reeving the rope.

(F) Unpack and inspect the load cells (Part Nos. B0-1100-17 & B0-1200-8), and the load display (Part No. B0-1100-16). Mount the load cells to the ends of the hoist arms in accordance with ref. dwg. B0-1100 and ref. dwg. B0-1200. Torque the fasteners in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Use the supplied mounting hardware packaged with the load display (not listed in the Bill of Materials) to mount the load display enclosure to the left bulkhead hoist in accordance with ref. dwg. B0-1100. Refer to Section 16416 ELECTRICAL WORK for related wiring requirements.

(G) Electrically disconnect the bulkhead hoist that will not be working on by disconnecting its plug from the control box. Refer to

Section 16416 ELECTRICAL WORK for related wiring requirements.

(H) Pull and reeve the wire rope through the sheaves in accordance with ref. dwg. B6-1000. The Contractor shall submit for approval a rope pulling procedure in order to ensure that wire rope uncoils from the drum during reeving in a controlled manner so as to prevent rope damage or other damage. Use an auxiliary hoist (tugger) or other approved method to maintain consistent tension on the rope as it is uncoiled from the drum and is reeved through the rope pathway (levelwinder, trolley, hookblock). Synchronize the levelwinder to the drum position. The rope pulling procedure shall show how the wire rope end connections are held during pulling. Include steps to verify that the end connections are secured properly at the drum and load cell. The Contractor shall supply the equipment required to perform the rope pulling and rope reeving procedure.

(I) With the plain end of the wire rope (Part No. B6-1000-1), outermost on the reel, attach a lead line to it and pull it through the reeving, the level winder and through the opening in the side of the hoist drum from the inside to the outside. Since the level winder moves one cable width per rotation of the drum, it is necessary to set the level winder to be heading toward the turnaround during the first half of a wrapping. Secure the cable with the rope clamp (Part No. Bl-2100-30). Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101. Remove the lead line. Turn on the hoist disconnect switch "DISC-2". Actuate the hoist and wrap the cable on the drum. Verify that the level winder is operating properly and that the cable is laying properly on the drum. If it is not, unreeve what was just put on, turn off the disconnect switch, break the levelwinder's drive chain, reposition the levelwinder, reconnect the chain and try again. Attach the first lead line to the swayed end and using an auxiliary one ton tugger, pull the wire rope through the load cell. Secure using the mounting hardware (Part Nos. B6-1000-2 & B6-1000-3). Remove the lead line.

(J) (Not Used).

(K) Attach the anti-two-block warning system (Part Nos. B0-1100-12 & B0-1200-7) to the wire ropes. Actuate the hoist and pick up the load block. Raise the hoist to a raised position.

(L) Replace the deck plates and the drive closures of the hoist drive unit.

(M) Electrically connect the hoist that has not worked on by installing its plug at the control box.

(N) Repeat steps D through L above for the other hoist arm.

(O) Turn off the hoist disconnect switch.

(P) Attach the load cell readout to the left hoist arm in accordance with ref. dwg. B0-1100. Attach the electrical signal cable from the load cell to the readout. Plug the load cells into the sockets provided. Refer to Section 16416 ELECTRICAL WORK for related wiring requirements.

3.10 STABILIZER FRAME

Lift the stabilizer frame (Part Nos. B3-1100-1, B3-1100-2, B3-2100-1, & B3-2100-2) (approximate weight: 1,600 pounds) in accordance with the approved lifting procedure using slings and a spreader bar. Measure and document the lifted load weight. Mount and secure the stabilizer frame to either the left or right hoist arms using the Stabilizer frame mount hardware (Part Nos. B3-1100-1 & B3-1100-2). Repeat with the second stabilizer frame. Refer to ref. dwg. B0-1100 and ref. dwg. B0-1200. Torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS.

3.11 CRANE UNDERCARRIAGE FLOODLIGHTS

The Contractor shall install the floodlights after other installation work has been substantially completed in order to avoid damage to the equipment. The Contractor shall unpack and inspect the following:

Description	Part No(s).
Righthand floodlight bracket weldment	(E1-1300-40)
Floodlight bracket mount u-bolts	(B0-1200-14)
Lefthand floodlight bracket weldment	(E1-1200-30)
Lefthand floodlight bracket mount bolts	(B0-1100-29)

Floodlights with mounting hardware:
Locations for floodlight mounting (indicated on ref. dwg. K1-2000) include:
- Righthand hoist arm stairway handrail (indicated on ref. dwg. B0-1200)
- Lefthand hoist arm frame (indicated on ref. dwg. B0-1100)
- Lefthand and righthand trolley (indicated on ref. dwg. B2-1000)

Fasteners required to mount the floodlights to the trolley weldments or to the respective mount brackets (Part Nos. E1-1300-40 & E1-1200-30) are not listed in the Bill of Materials but are included with the floodlight packaging. Snug tighten the floodlight mount U-bolts at the righthand handrail taking care to not overtighten and indent the handrail. Torque other bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Refer to Section 16416 ELECTRICAL WORK for wiring requirements.

3.12 JIB HOISTS

The jib hoists (Part Nos. J1-1000-10 & J1-1000-20) are now in storage at the Corps of Engineers Service Base (Boat Yard) in Fountain City, Wisconsin. The Contractor is required to transport these items for testing use at the project work site(s) for this contract work, and shall return them to the Corps of Engineers Service Base (Boat Yard) in Fountain City, Wisconsin when their use at the project work site is completed. Coordination shall be through the Contracting Officer. The Government will load/unload these items from the Contractor's transportation equipment (truck, trailer, floating plant, etc.) at the Service Base (Boat Yard). These items shall be installed after all other work of this technical section has been completed, and these items shall be installed only where required in accordance with Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING. Inspect the left jib hoist and right jib hoist (Part Nos. J1-1000-10 & J1-1000-20). Lift weights (approximate): 8,000 pounds each. The Contractor shall furnish storage stands (not detailed) for use under the jib hoists during this work. The jib hoists shall be installed once and only temporarily under Section 15010 MACHINERY STARTUP AND ACCEPTANCE

TESTING. The jib hoists must be removed before commencing any new assembled crane (existing superstructure and new undercarriage) travel operations due to interference with the existing dam pier houses. After acceptance testing of the jib hoists has been completed, the Contractor shall remove the jibs from there installed locations and package and transport the jib hoists and their storage stands to the Corps of Engineers Service Base (Boat Yard) in Fountain City, Wisconsin, as directed by the Contracting Officer, where such items will be unloaded by the Government.

3.13 CRANE SUPERSTRUCTURE

The Contractor shall remove the existing Government owned crane superstructure (Link Belt TC-78) from the existing crane undercarriage, as indicated, and reinstall it on the new Government furnished crane undercarriage, as indicated, as a part of the project contract work. The Contractor is responsible to perform all work of required disassembly and reassembly in accordance with the manufacturer's instructions. Link Belt literature including the Shop Manual, the Operations and Maintenance Manual, and the Parts Manual will be at the project work site(s) for the Contractor's inspection. The Contractor shall formulate and submit a lifting procedure for handling the existing crane superstructure and hoisting it onto the new crane undercarriage frame weldment as indicated. The slip ring installation procedures shall be formulated by the Contractor and coordinated with the new assembled crane (existing superstructure and new undercarriage) installation work.

3.13.1 Main Hydraulics Removal

The existing crane undercarriage hydraulic travel drive system is powered from a hydraulic pump and reservoir in the existing crane superstructure. This system is shown on the ref. dwgs. 8J1041-D through 8J1388-D and is further described in the manufacturer's literature. This hydraulic system is to be inspected, drained, and abandoned/removed as indicated on the contract drawings.

3.13.2 Connecting Electrical

The Contractor shall verify that main power disconnect switch is in the "OFF" position. The travel control station shall be located and mounted in the crane operator cab by the Contractor as approved. The slip ring wiring assignments shall be installed by the Contractor as indicated. There is no existing mount preparation for the travel control station and the Contractor shall fabricate and install a mount bracket for the travel control station as approved. Details of the operator cab are not documented to the extent that a mount system for the travel control station can be determined prior to inspection by the Contractor. The mount bracket shall be designed and fabricated by the Contractor from 1/4 inch thick (minimum) steel plate as a weldment to be in turn-bolted (not welded) to the crane operator cab. The travel control station shall be mounted as follows: in front of the operator station and to the lower right in a manner to be out of the operator's line of site during operations; be accessible during operations; and not interfere with other control functions. All edges of the mount system shall be deburred, chamfered, rounded, and minimized in package size in order to reduce obstructions and/or hazard to the operator.

3.13.3 Conical Roller Adjustments

During reinstallation of the existing (salvaged) crane superstructure the

Contractor shall perform shim alignment and shim adjustment to the conical roller assemblies in accordance with Section 4 of the Link Belt Shop Manual. The Contractor shall provide all new shims required and shall perform measurements and the alignment procedures in the presence of the Government's witness.

3.14 CRANE TAILSWING LIMITSWITCH

The Contractor shall unpack and inspect the limitswitch bracket (Part. No. C1-1500-80), limitswitch (Westinghouse HDH 25SO), and the limitswitch lever arm (Part No. C1-1100-31). This limitswitch system is designed to allow bulkhead hoisting only if the crane boom is aimed upstream. The Contractor shall fabricate and install as approved all additional mounting and actuating items required to make this limitswitch operable after the crane superstructure has installed. The Contractor shall fabricate and install the limitswitch strike plate to the existing crane superstructure as shown on the contract drawings. Prepare shop drawings to describe Contractor fabricated items and the entire limitswitch system installation and submit these for approval. Verify that the limitswitch bracket is positioned on the new crane undercarriage so that the limitswitch actuator arm as installed shall center its actuator wheel on the limitswitch strike plate and that the limitswitch actuator arm pivots tangent to the arc of existing crane superstructure rotation. Drill for and attach the limitswitch bracket to the top counterweight as shown on the contract drawings. Bolt the limitswitch, the lever arm, and limitswitch bracket together as shown on the contract drawings and torque the bolts in accordance with TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. The Contractor shall make any adjustments required to make the limitswitch system operable.

3.14.1 Reinstalled Existing Crane Superstructure Startup

Perform the following after the tailswing limitswitch has been installed:

(A) Make sure that all circuit breakers and disconnects are in the "OFF" position.

(B) Connect the power reel to the shore power junction box.

(C) Turn on the main power distribution disconnect.

(D) *{Not Used}*

(E) Turn on the circuit breakers and disconnects for the travel motors.

(F) Verify that the travel motors rotate in the right direction when either control stand is operated. If they do not, disconnect the power and swap two of the phases.

(G) Verify that the travel brakes set and release with the motors.

(H) Rotate the reinstalled existing crane superstructure so that the boom faces upstream.

(I) Verify that the bulkhead hoist motors rotate in the right direction when the controller is operated. If they do not, disconnect the power and swap two of the phases.

(J) Verify that the hoist motor brakes set and release with the motors.

(K) Rotate the crane boom away from the upstream orientation so that the tailswing limitswitch is not tripped.

(L) Verify that the hoist motors will not operate.

(M) Verify that the trolley actuators motors rotate in the right direction when the controller is operated. If they do not, disconnect the power and swap two of the phases.

(N) Verify that the trolley actuator brakes set and release with the motors.

(O) Verify that both jib hoists operate in the right direction when the controller is operated. If they do not, disconnect the power and swap two of the phases.

(P) Verify that the jib brakes set and release with the motors.

3.15 QUALITY CONTROL INSPECTION OF GOVERNMENT OWNED/FURNISHED EQUIPMENT

All parts of the existing crane superstructure and the new crane undercarriage shall be inspected by the Contractor prior to assembly/reassembly and installation/reinstallation. These inspections are intended to identify all parts relative to the bill of materials, to verify quantities, and to document condition (undamaged, damaged) on the parts as furnished. All parts are assumed to be furnished in fully functional condition, and the Contractor's quality control inspections are intended to document anything that may contradict this condition. These quality control inspections will be the basis for transfer of Government owned/furnished equipment responsibility from the Government to/from the Contractor. Quality control inspections are also to provide a functional check of subassemblies with the machinery in the pre-assembled condition to the extent that it is advantageous to do so. Quality control inspections shall be scheduled to allow for witnessing by the Contracting Officer. Quality control inspections shall take place at one event to the extent practical. The quality control inspection documents shall be prepared by the Contractor. Quality control inspection documents shall be in checklist format and shall include blanks after all items for dates and signature or initials of Government's representative and Contractor's representative. The Contractor shall be responsible for the care and handling of parts after the quality control inspection has been completed. The Contractor shall prepare a log book of all as-installed conditions in accordance with requirements described herein and in paragraph - FASTENER TORQUE PROCEDURES and paragraph - COUPLING INSTALLATION AND ALIGNMENT. The use of additional shims, adjustment to bolt torque settings, final coupling alignments, and other installation procedures or adjustments required outside the normal or expected readings or conditions shall be recorded by the Contractor in this log book. This log book shall be included as a part of the quality control inspection documents.

3.15.1 Motor Inspections

Motor inspections shall be conducted for travel motors (Part No. C1-1100-16), bulkhead hoist motors (Part No. B1-4100-1), and jib hoist motors (Part No. J1-1000-4). These motors are all furnished connected to other machinery such as reducers and brakes. Test energize motor heater

element(s). Manually spin motor to feel for subjective bearing roughness. Assemble motor startup instructions from manufacturer's operation and maintenance data. Verify that the motor nameplate and dimensions matches the respective reference drawings. Verify that options such as drain breathers are correctly located and functional. Test energize motors before installation under no-load conditions without disassembling the motors from their as furnished condition, but before connection to the other machinery.

3.15.2 Gear Reducer Inspections

Gear reducer inspections shall be conducted for the travel gear reducers (Part No. C1-1100-16), bulkhead hoist gear reducers (Part Nos. B1-4100-2 & B1-4100-3), and jib hoist reducers (Part Nos. J1-1000-3 & J1-1000-11). Test energize heater element(s). Manually spin reducer shafts to feel for subjective bearing roughness. Inspect seals for leakage. Verify that breathers are functional. Reducer lubricant sampling, flush, and refill are required for these gear reducers.

3.15.3 Brake Inspections

Brake inspections shall be conducted for the travel motors (Part No. C1-1100-16), bulkhead hoist motors (Part No. B1-4100-1), and jib hoist motors (Part No. J1-1000-4). These brakes are to be furnished installed to the respective motors. Test energize heater element(s). Remove coverings to the extent required to allow inspection of brake mechanicals through the range of motion to check for linkage problems. Include any operation and maintenance information related to initial brake adjustment settings.

3.15.4 Actuator Inspections

Actuator inspections apply to bulkhead hoist pawl actuators (Part No. B1-1110-35), bulkhead hoist trolley actuators (Part No. B1-1110-39), and jib hoist pawl actuators (Part No. J1-1000-7). Actuators are to be furnished installed. The Contractor shall verify that the actuators are securely attached and operate correctly. Compile any manufacturer's instructions for startup and adjustments from the operation and maintenance manual data. Test energize the actuators through their range of motion in both directions (three times minimum) as attached to the respective machinery. Measure and document the actuator stroke (to the nearest 0.1 inch) and stroke time (with a stopwatch to the nearest 0.1 second) in both directions and note any apparent problems in cycling. Inspect for any apparent seal damage. Verify that the actuator stroke as installed provides the range of motion needed for proper machinery actuation. Also inspect that the mechanisms actuated work as intended. Inspect that the trolley actuator integral brake mechanism engages and disengages. The Contractor shall identify the actuator range-of-travel adjustment methods from the manufacturer's instructions and make adjustments if required to obtain proper machinery actuation. Include copies of lubrication instructions from the operation and maintenance data and inspect and fill lubricant level as required. Flushing and sampling of lubricant is not required for actuators. Test energize any heating elements including the motor heater on the bulkhead hoist trolley actuator.

3.15.5 Bearing and Bushing Inspections

The Contractor shall inspect bearings and bushings on the new crane superstructure components and the new crane undercarriage components for all bearings and bushings listed in the Bill of Materials. For each

bearing inspection, first assemble photocopies of all the bearing manufacturer's data from the manufacturer's operation and maintenance manuals, including lubrication instructions and (where applicable) bearing installation instructions. The bearing inspection is to inspect that the parts are undamaged and that the part number matches that indicated in the Bill of Materials. The bearing inspections shall inspect that bearings already installed are installed in accordance with the bearing manufacturer's instructions. Bearing inspection shall include where possible, hand-rotation of bearing elements to feel for subjective roughness and seal damage. Bearing inspections shall make an accounting of the as furnished lubrication condition and shall include in the paperwork the lubrication instructions from the operation and maintenance data. The bearing inspection shall verify that bearing lubricant ports are functional and accounted for in the lubrication procedures.

3.15.6 Coupling Inspections

The Contractor shall inspect couplings on the existing crane superstructure components and the new crane undercarriage components for all couplings listed in the Bill of Materials. For each coupling inspection, first assemble photocopies of all the coupling manufacturer's data from the manufacturer's operation and maintenance manuals, including lubrication instructions and (where applicable) coupling installation instructions. The coupling inspection is to inspect that the parts are undamaged and that the part number matches that indicated in the Bill of Materials. The coupling inspections shall inspect that couplings already installed are apparently installed correctly. Coupling inspection shall include where possible, hand-rotation of coupling elements to feel for subjective roughness and seal damage. Coupling inspections shall make an accounting of the as furnished lubrication condition and shall include in the paperwork the lubrication instructions from the manufacturer's operation and maintenance data. The coupling inspection shall verify that coupling lubricant ports are functional and accounted for in the lubrication procedures.

3.16 LUBRICATION PROCEDURES

The Contractor shall be responsible to formulate lubrication procedures and maintain all machinery lubrication for the new crane undercarriage components in accordance with the manufacturer's operation and maintenance manual during the contract period. The Contractor shall perform all lubricant maintenance until the end of the contract period. The Contractor shall assume that all lubricated components listed on the Bill of Materials (couplings, reducers, bearings; and including the existing (salvaged) crane superstructure's conical roller assembly) shall require initial lubrication or other preparations as recommended by the component manufacturer. All lubrication shall be in accordance with procedures written by the Contractor, and as approved by the Contracting Officer. The lubricant procedures shall identify (point to) all lubricant points (Alemite fittings, fill ports, etc) of the new assembled crane (existing superstructure and new undercarriage) on suitably annotated copies of contract drawings and/or reference drawings. The drawings for lubrication procedures shall be grouped sequentially into one set to comprise the complete lubrication instructions for the new assembled crane (existing superstructure and the new undercarriage). All lubricant point locations on drawings shall include callouts containing the part number and name, its lubricant specifications, quantities, fill instructions, service intervals (time, revolutions, etc.), and shall include blanks (underlined spaces) for each lubricant point to be completed (dated and signed or initialed) as

each designated individual performs the work. The Contractor shall supply all required lubricants required during this work.

3.17 FASTENER TORQUE PROCEDURES

All threaded fasteners listed in the Bill of Materials, as well as all other threaded fasteners installed by the Contractor shall be installed in accordance with approved procedures to measure twice that proper torque is obtained at assembly. Fastener torque shall be selected from TABLE 05101-3.3 in Section 05101 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS or as approved. All fastener torques shall be independently verified by a second individual after the installer completes the fastener torque procedure for all of the fasteners in the given fastener group. Observation by a second individual of the individual performing the work shall not be considered independent torque verification. Independent verification may consist of achieving onset of breakaway torque with a calibrated torque wrench at the final required torque value. Grouped fasteners at flanges or component interfaces shall be successively tightened in at least two steps, with all tightened first to an intermediate level approximately 75 percent final torque, then all to the final torque value. All fastener torques shall be obtained using calibrated torque wrenches as required. All fastener torque procedures shall list size, thread form, Bill of Materials part number, quantities, and special instructions for each fastener group. Fastener torque procedures shall include blanks for the name and date of the individuals performing the installation and verification work. Fastener torque procedures shall contain copies of the drawing(s) to identify all locations and quantities of fasteners. Fastener torque procedures shall include description of equipment used and fastener preparation methodology.

3.17.1 Torque Wrenches

Torque wrenches used for these fasteners shall conform to ASME B107.14M. Torque wrenches shall be preset type with automatic breakaway (decoupling) when the preset torque value is attained. Torque wrenches used for this work shall have current calibration certification submittal that they are accurate to within $\pm$ 2 percent of full scale. Torque wrench calibration shall be performed by an independent testing agency normally engaged in torque wrench calibration. The Contractor shall furnish all torque wrench adaptors, fittings, and sockets required to access and tighten all fasteners with the required torque wrenches.

3.18 COUPLING INSTALLATION AND ALIGNMENT

The Contractor shall install (i.e., press-fit, etc.) and align couplings to the tolerances as indicated on the contract drawings. All shaft and bore machining required to install couplings furnished loose is already completed. Installation and alignment shall be in accordance with the coupling manufacturer's instructions and information contained in the operation and maintenance data. The Contractor is responsible to identify and follow the operation and maintenance instructions for coupling installation and coupling alignment. Couplings shall be installed onto shafts using only appropriate presses and attachments as approval.

3.18.1 Coupling Alignment

All coupling alignment measurements shall be performed with two dial gage assemblies using the reverse-indication method, the face and rim method, or other approved method that can indicate both axial and parallel

misalignment. The Contractor shall furnish all equipment required for coupling alignment. The alignment measuring system components shall be demonstrated to indicate repeatable measurements (radial runout, face-to-face, etc.) accurate to the nearest ± 0.005 inch. This means that dial gage bases and clamps shall be specifically designed for the shape of surface to which they attach (cylindrical, flat, etc) for rigid mounting. The coupling alignment procedure shall include systematic plots/lists of the measurements for at least four positions per revolution and shall interpret and document the actual axial and parallel misalignment for the adjustment steps from initial through final coupling alignment obtained. The coupling alignment procedure shall document the shim quantities, locations, and thicknesses required for final alignment on the as-built markup drawings. The final alignment data for couplings shall also be included in the as-built markup drawings, which are to be submitted as a complete package. The coupling alignment procedures shall be scheduled in advance to allow the Contracting Officer to witness the alignment sequence and directly verify accuracy and repeatability of obtained readings.

3.18.2 Shims For Coupling Alignment

Shims for coupling alignment are Government furnished only where listed in the Bill of Materials. Other shims for coupling alignment shall be provided by the Contractor. Where Contractor furnished shims are required, they shall be professionally manufactured items die-cut from stainless steel (Type 304 or as approved) free from burrs or sharp corners, with thickness designation embossed onto them and sized to fit at each fastener of the shimmed interface. For all shims used, the Contractor shall document where shims are installed and thickness of shims used at each location to obtain final alignment. Any corrodible steel (i.e., machined flange surfaces, etc.) at shimmed interfaces shall be treated with the approved thin film rust preventative compound (such as No-Ox-Id by Sanchem, Inc.) before shims are finally secured, to prevent rust from forming at the shimmed interface after assembly.

3.19 LIFTING PROCEDURES AND REPORTS

The Contractor shall prepare and submit for approval an individual lifting procedure for each Government furnished component weighing more than 1,000 pounds that shall be lifted by the Contractor's equipment. Lifting procedures shall show sufficient detail to verify safe lifting practices in compliance with the safety requirements covered under OSHA, ASME B30 Standards Committee, and EM 385-1-1. Lifting procedures are required to verify safe practices and are also intended to provide lifting information for future operation and maintenance reference. Procedures shall include estimated lifted load weight, assignments and duties of personnel to be involved in the lift, lift pathway, and scheduled time of lifting. Lifting procedures shall show in sketch format (based on contract drawing of part, etc.) all Contractor furnished hoisting and rigging equipment, including size/rated capacities, and where it will be used including the method of attachment to Government's equipment. Lift procedures shall identify equipment to be lifted in terms of the Bill of Materials and shall list lifted load weight (estimated for submittal purposes and actual measured weights recorded during lift). Lift procedures shall describe all temporary shoring and staging platforms. Lifting procedures shall give the name and model of the Contractor's lifting equipment proposed to be used and shall include crane load/radius curves. For all lifts where lifting procedures are required, measure and document the actual lifted load with the calibrated crane scale (Contractor supplied scale) for inclusion in the reports.

3.20 COATING (PAINT) REPAIR FOR MODICATIONS ON EXISTING DAM SERVICE BRIDGE

Items or surfaces to be recoated (repainted) include, but are not limited to, the following: new cable flip-over device attachment areas on the existing dam service bridge structural steel; new access platform; and all coated (painted) areas on dam service bridge structure (other than metallized dam service bridge components) damaged during the contract period. The coating (paint) system required shall match the color(s) of the existing coating (paint) system. Coatings (paint) may be spray or brush applied. Additional coats may be applied as necessary to achieve the required dry film thicknesses.

3.20.1 Coating (Paint) System No. 15

Coating (paint) System No. 15 shall consist of an epoxy primer and urethane topcoat passing all the test requirements of the Commercial Item Description (CID). Application shall be by spray, brush or roller. Dry film thickness of each coat shall be within plus or minus 20 percent of that recommended by the manufacturer for the qualification testing. The epoxy and urethane coatings shall be mixed and thinned in accordance with the manufacturers written directions. Mixed coating material that has exceeded the manufacturers pot life shall not be applied. Materials that have been mixed for more than 8 hours or that have thickened appreciably shall not be applied. The manufacturers recommendations for minimum and maximum dry time between coats shall be met.

Surface Preparation	First Coat	Second Coat
SSPC SP 10	Epoxy Primer CID A-A-3132	Urethane Topcoat CID A-A-3132

3.20.2 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint system(s) is for identification purposes only. Cleaning and pretreatment of surfaces prior to coating (painting) shall be accomplished as recommended in writing by the coating (paint) manufacturer and as approved.

3.20.3 Protection of Noncoated (Nonpainted) Items and Cleanup

The Contractor shall provide protection for all existing and new machinery at the contract project work site including, but not limited to, such items as electric motors, gears, bearings, switches and switch gear, brakes, controllers, etc. The Contractor shall clean all of the above items that become contaminated with blasting abrasives and/or coating (paint) materials. Walls, equipment, fixtures and all other items in the vicinity of the surfaces being coated (painted) shall be maintained free from damage by coating (painting) activities. Coating (paint) spillage and painting activity damage shall be promptly repaired.

3.21 COATING (PAINT) FOR NEW ASSEMBLED CRANE, NEW CONTRACTOR FURNISHED ITEMS, AND ITEMS MODIFIED BY THE CONTRACTOR

3.21.1 General

The Contractor shall repair all damaged coating (paint) areas of the

installed new crane undercarriage; the reinstalled existing (salvaged) crane superstructure will not require touchup coating (painting). The Contractor shall also paint the following new Contractor furnished items: crane travel control stations; crane rotation limit switches; and new Contractor furnished crane rail stops. The Contractor shall also paint the following items modified by the Contractor: Contractor modifications to the new Government furnished pickup beams.

3.21.2 Repair Coating (Painting)

The repair coating (painting) procedure for the new assembled crane shall use the same coatings (paint) and obtain the same dry film thicknesses (dft) as the original (undamaged) coating (paint) system. The surface preparation for all repair coating shall be SSPC SP 1, SSPC SP 2, or SSPC SP 3 as appropriate for the surface condition. The repair coating (paint) system(s) may be brush-applied. Coating (paint) workmanship shall be such that the repair coating (paint) neatly and completely covers damaged coating (paint) areas and is free of voids, holidays, lumps, drips, etc.

3.21.3 New Coating (Painting)

The new coating (painting) system (including surface preparation and coating applications) shall be the same as the new crane undercarriage coating (paint) system in accordance with paragraph "New Crane Undercarriage Coating (Paint) System" below. The coating (paint) system may be brush-applied. Coating (paint) workmanship shall be such that the coating (paint) neatly and completely covers the required areas to be coated (painted) and is free of voids, holidays, lumps, drips, etc. Coating (paint) color(s) will be selected by the Contracting Officer from the Contractor's submitted coating (paint) color chip chart.

3.21.3.1 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint system(s) is for identification purposes only. Cleaning and pretreatment of surfaces prior to coating (painting) shall be accomplished as recommended in writing by the coating (paint) manufacturer and as approved.

3.21.3.2 Protection of Noncoated (Nonpainted) Items and Cleanup

The Contractor shall provide protection for all existing and new machinery at the contract project work site including, but not limited to, such items as electric motors, gears, bearings, switches and switch gear, brakes, controllers, etc. The Contractor shall clean all of the above items that become contaminated with blasting abrasives and/or coating (paint) materials. Walls, equipment, fixtures and all other items in the vicinity of the surfaces being coated (painted) shall be maintained free from damage by coating (painting) activities. Coating (paint) spillage and painting activity damage shall be promptly repaired.

3.21.4 New Crane Undercarriage Coating (Paint) System

The new Government furnished crane undercarriage components will be furnished coated (painted) with a low V.O.C. epoxy paint system from Ameron Protective Coatings Division, Brea, California. This coating (paint) system is the same for all coated (painted) surfaces of the new crane undercarriage. The new Government furnished crane undercarriage components coating (paint) system is the following:

Surface Preparation	First Coat	Second Coat	Third Coat
SSPC SP 10	Amercoat 68A zinc-rich epoxy primer 5 mils dft min.	Amerlock 400 high solids epoxy 2 mils dft	Amerlock 450HS Aliphatic Polyurethane 5 mils dft min.

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DIVISION 15 - MECHANICAL

SECTION 15010

MACHINERY STARTUP AND ACCEPTANCE TESTING

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SECTION 15010

MACHINERY STARTUP AND ACCEPTANCE TESTING

1.1 SCOPE

This section covers the following:

(A) Defines startup testing, inspections, load indicator calibrations, and acceptance testing of the new assembled crane (existing superstructure and new undercarriage);

(B) Defines minimum requirements and content for an orderly sequence of operational tests in order to verify that all systems of the new assembled crane (existing superstructure and new undercarriage) after completion of the installation are functioning as designed and approved;

(C) Checking the calibration of each bulkhead hoist load indicator system; and

(D) Performance parameters to be measured against during acceptance testing.

1.1.1 General

The Contractor shall formulate written procedures and checklists to form the template for all tests, inspections, and measurements of this section. Unless approved otherwise, all inspections and testing required under this technical section shall be conducted in the presence of the Contracting Officer and in the presence of the existing crane superstructure manufacturer's representative(s) and the new crane undercarriage manufacturer's representative(s). The Contractor shall furnish all equipment, labor, and supplies required for performing and completing inspections, testing, and measurements.

1.1.2 Scheduling Work

Unless otherwise approved in writing by the Contracting Officer, the contract project work cover under this technical section shall not commence until the contract project work covered under Section 15000 MACHINERY INSTALLATION and Section 16416 ELECTRICAL WORK has been completed.

1.2 REFERENCES

The publications listed below form a part of this technical section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.5	(1999D) Mobile and Locomotive Cranes
ASME B30.10	(1999) Hooks

ASME B40.1	(1998) Gauges - Pressure Indicating Dial Type - Elastic Element

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ASNT SNT-TC-1A	(1996) Personnel Qualification and Certification in Nondestructive Testing

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 275	(1998) Magnetic Particle Examination of Steel Forgings
ASTM E 709	(1995) Magnetic Particle Examination

CRANE MANUFACTURER'S ASSOCIATION OF AMERICA (CMAA)

CMAA 10099	Crane Operators Manual
CMAA 10102	Overhead Crane Inspection and Maintenance Checklist

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (OSHA)

OSHA 29 CFR 1910.179	Overhead and Gantry Cranes
OSHA 29 CFR 1926.32	Definitions
OSHA 29 CFR 1926.550	Cranes and Derricks

U.S.ARMY CORPS OF ENGINEERS ENGINEER MANUALS (EM)

EM 385-1-1	Safety and Health Requirements Manual

1.3 GENERAL

1.3.1 Operations During Testing

The new assembled crane(existing superstructure and new undercarriage) operation shall be in accordance with EM 385-1-1, OSHA 29 CFR 1910.179, OSHA 29 CFR 1926.32, OSHA 29 CFR 1926.550, and the applicable ASME B30 Committee standards. The additional requirements in Section 15000 MACHINERY INSTALLATION pertaining to these applicable publications shall apply to the work of this technical section.

1.3.2 Designated Crane Operator

Only the Contractor's designated crane operator as approved in Section 15000 MACHINERY INSTALLATION shall operate the controls of the new assembled crane (existing superstructure and new undercarriage) during the performance of the contract project work of this technical section. The Contractor's designated crane operator shall also maintain the crane logbook during the performance of the contract project work of this technical section.

1.3.3 Operations and Maintenance Manuals

The manufacturers' operation and maintenance manuals are reference documents for the contract project work; refer to Section 15000 MACHINERY

INSTALLATION for information on the manufacturers' operation and maintenance manuals. The Contractor shall perform all of the applicable crane superstructure manufacturer's and the crane undercarriage manufacturer's equipment normal startup procedures, operating procedures, and maintenance procedures and the Contractor shall furnish all equipment, labor, materials, and supplies required to perform these procedures.

1.3.4 Hoisting and Rigging Procedures for Testing

The manufacturer's instructions do not include specific hoisting and rigging procedures to use during acceptance testing of the new assembled crane (existing superstructure and new undercarriage). The Contractor is responsible to formulate hoisting and rigging procedures in accordance with EM 385-1-1, OSHA requirements, and the applicable ASME B30 Committee standards. Hoisting and rigging procedures for testing shall contain the same submitted information as the lifting procedure submittals defined in Section 15000 MACHINERY INSTALLATION.

1.3.5 CMAA Requirements

CMAA 10102 and CMAA 10099 shall be incorporated into the Contractor's Initial and Frequent inspection procedures.

1.3.6 Documentation Responsibility

The Contractor is responsible for recording and compiling all test data and for reporting the results for each test item in the approved format. The Contractor is responsible for compiling the originals of all of the test documentation in chronological order and shall submit the complete set of testing documentation at the end of acceptance testing. Copies of certifications shall be submitted where certifications are required. In addition, the Contractor shall submit copies of all test documentation at the end of the working day that the respective test item has been performed.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Crane Logbook; GA.

Submit blank crane logbook (for the assembled new undercarriage only) for approval of content and organization. Include blank copies of Frequent inspection checklists, and all other data entry forms required to be part of the logbook.

Testing and Inspection Equipment; FIO.

The Contractor shall submit descriptions of testing, inspection, and measurement equipment proposed to be utilized for the work of this technical section. Submittals shall include as applicable: shop drawings, manufacturer's catalog cuts, manufacturer's engineering information. Equipment to be described shall include: test weights, crane scale, hoisting and rigging equipment. Copies of accuracy and calibration

certifications for measuring instruments including crane scales, ammeters, levels, and the hydraulic wheel load (pancake cylinder) measuring system. The submittals shall be sufficiently detailed to illustrate that the equipment meets the contract requirements.

Qualifications for Nondestructive Examinations; FIO.

Submit name of each testing agency and qualifications of each individual proposed for performing the magnetic particle examination of hook parts as required. Submit description of proposed test method including particle type (brand), equipment, current, and magnetization details.

SD-06 Instructions

Test and Inspection Procedures; FIO.

The Contractor shall prepare and submit proposed schedule for all test work and inspection work of this technical section. The proposed test procedures shall call out all procedural steps in the intended sequence, and shall contain all test item acceptance criteria and checklists to be completed. Submit calendar dates for required witnessed tests to allow coordination with Government representatives site visits.

Hoisting and Rigging Procedures; GA.

Hoisting and rigging procedures shall be formulated by the Contractor and submitted for approval to the extent required to perform the work of this technical section. Hoisting and rigging procedures for testing shall contain the same submitted information as the Lifting Procedure submittals presented in Section 15000 MACHINERY INSTALLATION.

SD-09 Reports

Test and Inspection Reports; FIO.

Photocopies of paperwork completed during the working day (including but not limited to: checklists, procedures, test reports, inspections) shall be submitted to the Contracting Officer at the end of the same working day that the items are completed. Copies of certifications shall be submitted where certifications are required. Five copies of the complete test document with all compiled paperwork shall be submitted to the Contracting Officer at the end of the work of this technical section. The final test report document shall be compiled into standard 3-ring binders in chronological order. The document shall be organized by tabs labeled with the item name and technical section specification paragraph(s) to which the respective report section pertains.

Fluids Sampling and Analysis; GA.

The Contractor shall submit the name of each oil testing company proposed for performing the fluid (lubricant oil, hydraulic fluid) sample analyses for approval. The Contractor shall submit sampling procedures (what, where, when, how) and blank copies of typical analysis reports from the proposed oil company. The Contractor shall submit test reports for the sample fluid analyses as part of the Initial inspection report and first Periodic inspection report.

PART 2 PRODUCTS

2.1 TEST AND INSPECTION EQUIPMENT

The Contractor is responsible to furnish and set up all equipment required to accomplish the test and inspection work covered under this section. The Contractor may propose alternative test and inspection equipment, to that required, provided that the test and inspection acceptance criteria and obtained accuracies are not compromised. The Contractor shall make available to the Government all measurement equipment and all test equipment that the Contractor uses under this contract as may be required so the Government can verify or repeat measurements or tests upon request.

2.1.1 Test Weights

The Contractor shall determine the weight of one of the Government's existing bulkheads with the crane scale (to $\pm$ 0.5 percent accuracy) and use it to check calibration of the bulkhead hoist load indicator system. Dead load weights are required for the Initial inspection of the bulkhead hoist load indicator system. Only bulkheads and pickup beams are allowed as the dead load weights for test lifts under this contract. Hydraulically loaded cylinders, dynamometers, or other alternative means to develop resistive forces are not acceptable.

2.1.2 Crane Scale

The Contractor shall supply a crane scale in order to provide accurate measurement of required lifted loads. The crane scale will be used as the basic measuring instrument for the work of this technical section. The crane scale shall be hook-mounted inline between the hookblocks and lifted load or test weights. The Contractor shall supply all end connections to attach the crane scale between the hookblocks of the respective hoist and the lifted loads as required. The crane scales shall each be digital readout electronic strain gage type with current certification that they are calibrated accurate to within $\pm$ 0.5 percent of the actual lifted load.

2.1.3 Wire Rope Speed Measurements

Hookblock hoisting speeds shall be derived by observation of timed intervals between markings on the wire rope. Rope markings shall be spaced at regular 5 foot $\pm$ 0.5 inch intervals for a 50 foot segment on a single part of rope. Rope interval markers shall be premium grade high-visibility (i.e., white, red, or as approved) tape or high-visibility marking paint as approved. The interval markers shall be uniform 2 inch wide all around the rope surface and have clearly defined edges (i.e., no overspray or runs if painted). Interval markers shall be firmly adhered to the rope surface, with sufficient durability to last for the test duration. Interval markers shall be alternating colors along the interval sequence. The rope with interval markers shall pass in close proximity to a fixed cursor on the dam service bridge, positioned for minimized parallax error relative to the observers. The cursor tip shall be positioned within 6 inches of the passing rope interval markers. The cursor tip shall be similarly painted or taped with high visibility coating for visual clarity. The rope speed measurement setups shall be positioned so that the entire marked length of rope can be passed by the cursor at high speed or low speed in one test run.

2.1.4 Level

The Contractor shall furnish an electronic (digital; not bubble vial) level accurate to within $\pm$ 1/6 degree and similar to McMaster Carr part No.

20305A35. This electronic level shall be utilized by the Contractor (and witnessed by the Contracting Officer) to measure the bulkhead hoist hookblock alignment/misalignment and end truck brace alignment/misalignment. The level shall be laid on a designated flat area on the pickup beam and on the end truck vertical face, both areas as approved, for required measurements. The level shall be used to measure and/or verify vertical alignment of end truck assemblies and levelness of the bulkhead pickup beam during acceptance testing. The Contractor shall allow the Contracting Officer to utilize the level for measuring other items to be determined.

2.1.5 Timing Stopwatches

Time measurements shall be taken with two stopwatches to be supplied by the Contractor. One measurement will be taken by the Contracting Officer, and the other will be taken by the Contractor's inspector. Both time measurements will be documented for each timed event. Disagreement of more than + 10 percent or more than 1 second between the two time measurements will be automatic cause to repeat the respective test item and retake the time measurements.

2.2 CRANE LOGBOOK

The Government will furnish to the Contractor the crane logbook to be maintained and kept up-to-date by the Contractor for the duration of the project contract work period. The Contractor is responsible for recording inspection results for all relevant ANSI B30.5 frequent and periodic inspection data. The Contractor shall also include frequent and periodic inspection items delineated in EM 385-1-1 (Paragraph 16.C and Appendix H). Crane logbook entries shall include dates and names of individuals for all inspection items.

PART 3 EXECUTION

3.1 GENERAL

All testing shall be in accordance with the schedule of testing procedures prepared by the Contractor and submitted to the Contracting Officer for review. Testing procedures are intended to verify proper assembly and proper operation of all of the new assembled crane (existing superstructure and new undercarriage) controls and functions in an organized manner, and to facilitate scheduling of site visits by test witnesses. All testing procedures shall contain blank spaces for adding (inserting) the names and dates of test attendees. Each test item shall be certified complete by the initials of the designated crane operator after satisfactory completion of each test item. Test procedures shall define measurement equipment, test setups, acceptance criteria, accuracy of measurements, and testing sequences. Testing procedures shall be stand-alone documents to contain copies of drawings, charts, and figures required to verify item completeness without having to refer to operation and maintenance manuals, or elsewhere, during the testing. The Contractor shall report unforeseen problems uncovered during testing to the Contracting Officer in a timely manner and a description of such problems along with the Contractor proposed solutions shall be included in the final test report(s). The Contracting Officer and the manufacturer's erection engineer(s) may observe any or all testing and inspection procedures.

3.2 ASME B30.5 INITIAL, FREQUENT, AND PERIODIC INSPECTIONS

ASME B30.5 defines requirements and terms for the crane superstructure and crane undercarriage for the following inspections including: Initial, Frequent, and Periodic. These ASME B30.5 inspections shall be conducted by the Contractor during the contract period. The Contractor shall perform the one Initial inspection of the new assembled crane (existing superstructure and new undercarriage) systems as the first item of acceptance testing. The Contractor shall perform Periodic inspections as required during the contract period; one of the Periodic inspections of the new assembled crane (existing superstructure and new undercarriage) systems shall be performed as the last item of acceptance testing. The Contractor shall perform Frequent inspections of the new assembled crane (existing superstructure and new undercarriage) systems each working day for the period of time between the Initial inspection and the Periodic inspection. These inspections shall have content in accordance with the requirements of the following: ASME B30.5, OSHA 29 CFR 1926.550, EM 385-1-1, CMAA 10102; and as approved. The Contractor shall compile inspection procedures into a systematic checklist format with sequenced listing of inspection items, acceptance criteria, and blank spaces for date(s)/initials of the inspector. The inspection procedures shall be comprehensive to the extent that the relevant operation and maintenance document references are copied and contained within the inspection documents so that referral back to the operation and maintenance manuals or elsewhere is not required while conducting the inspection procedures.

3.2.1 Initial Inspection and First Periodic Inspection

The Contractor shall be responsible for performing the Initial inspection and the first Periodic inspection for the new assembled crane (existing superstructure and new undercarriage) in accordance with ASME B30.5. The Initial inspection shall take place before acceptance testing commences. The first Periodic inspection shall occur after all other acceptance testing has been satisfactorily completed. The Initial inspection and first Periodic inspection shall include the following items in addition to the ASME B30.5 requirements.

(A) Inspections with machinery deenergized. The Contractor shall perform all test and inspection items that can be done with the machinery deenergized before other energized testing/inspection items are done. These static inspection items shall be included in the first scheduled part of both the Initial inspection procedures and Periodic inspection procedures. The Initial inspection procedures shall include certification that the work of Section 15000 MACHINERY INSTALLATION is complete. Static inspection procedures shall include but not be limited to: lubrication and fluid levels; critical control switches (disconnects, crane mode switch); safety and warning devices; bolt torques; wire rope components and reeving; hydraulics system level and leakage inspection; and verifying that the crane logbook is current.

(B) Inspection items with no loads on hookblocks. For Initial and for Periodic inspections, items that do not require loads on hookblocks shall be conducted before test items requiring loaded hookblocks. Crane indicator calibration and bulkhead load indicator calibration are items of work that require loads suspended from hookblocks. Unless required otherwise, there shall be no loads attached to hookblocks unless required for the calibration work.

(C) Fluids sampling on the new assembled crane (existing superstructure and new undercarriage). The Contractor is responsible

to extract fluid samples from the existing crane superstructure hydraulics system reservoir, the new crane undercarriage hydraulics brake system reservoir, the bulkhead hoist enclosed gear reducers, and the travel drive gear reducers. The first fluids sampling and analysis shall occur during the Initial inspection phase before acceptance testing. The second fluids sampling and analysis shall occur during the Periodic inspection at the end of acceptance testing. The Contractor shall have these samples subjected to standard analysis for content by an oil company testing laboratory (Amoco, Mobil, Exxon, etc.) that normally provides this service. The name of the sampling service company shall be submitted for approval along with sampling procedures proposed for use. The Contractor shall use the sampling vials and sampling procedures from the approved oil sampling company. The Contractor shall follow sampling procedures that ensure samples are representative of the fluid within the sump(s), and that samples are taken in a consistent manner at different times. Sampling shall be taken immediately after machinery is actuated for minimum of two minutes in order to thoroughly mix potential contaminants within the fluid stream from which samples are drawn. The Contractor shall submit sample procedures (i.e., what, where, when, how) and originals of analysis reports from the oil company testing laboratory as part of the testing report. The sample analysis company shall measure and report the following items for each sample:

(1) Parts per million (ppm) by weight of the following elements: Cr, Cu, Fe, Pb, Sn, Al, and Si.

(2) Water (volumetric percent).

(3) Viscosity (cST at 40 oC or as approved), and SAE viscosity grade estimate.

(4) Sediment/solids (volumetric percent).

(D) Miscellaneous wear items. It is presumed that there will be no appreciable wear on the new undercarriage components prior to the start of the contract project work. Initial inspection measurements for wear items shall consist of documenting the as-furnished condition and dimensions. Periodic inspection measurements for wear items shall be taken in the same manner as for the Initial inspection.

(1) Brakes. The Contractor shall disassemble the respective machinery to the extent required to obtain access to document the brake lining/pad thicknesses. For each brake band, shoe, and/or pad, take and record three lining thickness measurements to the nearest 0.005 inch in equally distributed positions using a vernier caliper or other measuring instrument as approved. Include sketch or drawing of each brake lining to show actual measurements and where measurements are made on the part. For each brake lining, document the minimum lining thickness allowed by the operation and maintenance information.

(2) Seals. Wipe clean around all rotating seal interfaces for all hydraulic and oil lubrication seals. Document any seepage, scoring damage, and any other unusual conditions at the seal interfaces. View the crane superstructure boom cylinders in the full up and full down positions and inspect/document for these conditions.

(E) Wire rope and reeving. Comprehensive rope and reeving inspection shall occur before any lifting operations at the Initial inspection, and again at the Periodic inspection (at the end of testing). Inspect the entire length of wire ropes for any broken strands, kinks, corrosion, reduction of diameter, and/or other damage; and document all apparent defects in the inspection report. Document any conditions which cause the rope to not be characterized as new. Rope and reeving inspection shall follow the scope of ASME B30.5 except as required. For each rope assembly (two on bulkhead hoists, two on jib hoists, one on crane superstructure), use a vernier caliper to take and record ten diameter measurements. Measurements shall be to the nearest ± 0.005 inch and randomly distributed along the rope length. Inspect that end connections are properly attached. The Initial inspection shall include criteria for assessing as-furnished attachment of end fittings (i.e., wire rope clip bolt torque, length of protruding rope end, swage interface, etc.) and these items shall be documented in the inspection procedures. The Contractor shall furnish installation quality control procedures for all wire rope end connections assembled under this contract, including crane superstructure hoist rope, and rope connections at drums. For wedge/clamp type wire rope end connections, the free end shall be marked with paint in a manner to indicate if any rope slippage at the connection occurs during testing.

(F) Hooks. Hooks on hookblocks of the new assembled crane (existing superstructure and new undercarriage) shall be inspected in accordance with ASME B30.10, and as required, during both the Initial inspection and the Periodic inspection. The Contractor shall measure and record the minimum distance throat opening of the hook eyes. Also record the distance between the hook punch marks if they exist. Measurements shall be made to the nearest ± 0.001 inch with a vernier caliper. The Contractor shall obtain and report the manufacturer's recommended maximum distortion for the hook throat opening for all hooks for future reference. The Contractor shall inspect that connections are secure for all latches and swivels, and that they move freely. The exposed parts of the hook forgings shall be subjected to magnetic particle examination in accordance with ASTM A 275 and ASTM E 709, where indications greater than 0.1 inch are to be reported. Magnetic particle examination shall be performed by an inspector qualified to ASNT Level II requirements in accordance with ASNT SNT-TC-1A. The specific type of magnetic particle examination technique (wet, dry, fluorescent, etc.) and equipment to be used shall be the most appropriate as determined by the inspector and as approved. Positions and orientations of indications shall be shown on sketch of the part to be included with the report. The NDT inspector shall render a judgment of pass/fail for the hooks based on ASME B30.10 criteria. The NDT report shall include the inspector's name, date of inspection, and inspection company name.

(G) Hydraulic systems. Clean and dry the exposed/external parts of the hydraulics system components in order to allow visual examination for leaks during both the Initial inspection and the Periodic inspection. Wipe down seals, flexible hydraulic hoses and end connections, cylinder rods, and wetted spots with required cleanup equipment. The Contractor is responsible to document and report each observed leakage in the inspection report. The Contracting Officer will subsequently determine corrective action, if any, to be taken. The Contractor is responsible to disassemble and reseal threaded connections in the hydraulics system components in order to obtain leak tight sealed interfaces.

(H) Approval to operate. No loads shall be suspended from hookblocks on the new assembled crane (existing superstructure and new undercarriage) until after written approval to operate from the Contracting Officer has been received by the Contractor. New assembled crane (existing superstructure and new undercarriage) travel under power along the dam service bridge railway is prohibited until after written approval to operate from the Contracting Officer has been received by the Contractor, except for conditions under the direct supervision of the Government's designated witness. The Contracting Officer will grant approval to operate the new assembled crane (existing superstructure and new undercarriage) only after the Initial inspection report for items that do not require hookblock loads is approved, and only after startup testing has been satisfactorily completed. Proof testing of the crane superstructure, the bulkhead hoist, and the jib hoists shall be conducted after written approval to operate from the Contracting Officer has been received by the Contractor.

(I) Crane superstructure Initial inspection. The Contractor shall be responsible for performing the Initial inspection the existing crane superstructure (after assembled on the new crane undercarriage) in accordance with EM 385-1-1, Paragraph 16.C.11 and the relevant ASME B30 Committee standards. The Initial inspection shall include tests that the safety interlocks for the new assembled crane (existing superstructure and new undercarriage) are fully operable. The safety interlocks on the crane superstructure consists of an anti-two block device (load indicator system), the crane superstructure rotation limitswitch, and the crane boom winch freefall/power down switch. The safety interlocks on the crane undercarriage include the bulkhead hoist load indicator anti-two block systems, anti-two block system for the jib hoists, and the crane superstructure rotation limitswitch.

(1) Crane superstructure rotation limitswitch. The crane superstructure boom orientation (rotation) is interlocked with the bulkhead hoist by a limitswitch so that the crane boom must be oriented in the upstream direction for maximum counterweight effect before the controls allow bulkhead hoist operation. The Contractor is responsible to verify proper operation of the crane superstructure rotation limitswitch system as shown on the contract drawings.

(2) Crane superstructure load indicator Initial inspection. The Contractor shall document the calibration accuracy of the crane superstructure load indicator system and inspect for proper function. The crane superstructure load indicator system program does not limit load relative to boom radius and load limits do not change with crane superstructure rotation (i.e., boom facing upstream, downstream, or along the dam service bridge railway rails). As a part of the Initial inspection, the Contractor shall document all load indicator commands and display readouts in all user-accessible display modes for future reference. Instructions for accessing the display options are listed in the operation and maintenance manual. The Contractor shall document the accuracy of the as-furnished crane load indicator system weight calibration by comparing the crane scale reading weight for the existing Government owned pickup beam, lifting sling, and bulkhead to the load indicator readout. Test weights shall be lifted from the existing storage yard (ground level), at the contract project

worksite, elevation for trial lifts using the Government's pickup beam lifting sling. The crane scale shall be attached between the pickup beam and the lifting sling and the crane hookblock in order to provide calibrated load indication. For each lift, the Contractor shall document both the crane scale indicator and the load indicator readout (tare weight). The Contractor shall be responsible for certifying that the crane load indicator system is fully operable as installed. The Contractor shall also inspect that the ratchet-pawl load-holding devices, anti-two block systems, and hoist drum brake systems are fully operable.

(J) Bulkhead hoist Initial inspection. Safety interlocks for the bulkhead hoists include the load indicator system and the anti-two block system. The bulkhead hoist load indicator system is based on two in-line Martin-Decker Totco load cells attached at the dead end of the hoist wire ropes and a calibrated digital display installed on the right hoist handrail by the Contractor. The bulkhead hoist load indicator system is factory-set to limit lifted load (combined between the two hookblocks) to 82,500 pounds. The two bulkhead hoist hookblocks are mechanically linked together through the synchronization shaft assembly. Both the left and right bulkhead hoist arms have their own Wylie anti-two block system. The Contractor shall verify function for these safety systems by following the steps described in the manufacturer's operation and maintenance manual. Remove bulkhead hoist floor covers (Part No. B4-1000), machinery covers (Part No. Y1-1500), and synchronization shaft top covers (Part No. E1-1101) in order to allow visual inspection of all moving parts of the bulkhead hoist during trial lifts. The Contractor shall manually verify that the anti-two block system is fully operable before any lift attempts are made. The Contractor shall be responsible to certify that the installed load indicator system and anti-two block system are properly calibrated and fully operable as required. The Contractor shall also inspect that the hoist trolleys, ratchet-pawl load-holding devices, and brake system are operable as required.

(1) Bulkhead and pickup beam weight measurement. The Contractor shall measure and document the dead weight load of one of the bulkheads, the dead weight load of the bulkhead pickup beam, and the dead weight of the Government's lifting sling. This shall be accomplished using the Contractor's lifting equipment, the Contractor's calibrated lifting equipment (crane) scale, and the Government's pickup beam four leg lifting sling.

(K) Jib hoist Initial inspection. Install the jib hoist modules (Part No. J1-1000-10 and Part No. J1-1000-20) on the new crane undercarriage in accordance with the manufacturer's operation and maintenance manual. Remove the jib hoist covers (Part No. J1-1100-30) to allow visual inspection of the hoist mechanicals during trial lifts. Before any loads are lifted, the Contractor shall inspect that the anti-two block system (Part No. J1-1000-12), ratchet/pawl load-holding devices, and hoist brakes are fully operable as required.

(L) Grease lubricant fitting locations. The Contractor shall identify the location of all grease fittings on the new assembled crane (existing superstructure and new undercarriage) on drawing views selected from the contract drawings and reference drawings as appropriate. These drawings include, but not limited to, the following reference drawing numbers: B1-1110; B2-1000; and C1-1200. The selected drawings shall be annotated by the Contractor, and as approved by the

Contracting Officer, using arrowheads and callouts to identify: lubricant brand and designation; time interval between lubrication; quantity control; inspection for low/full condition; and other pertinent instructions.

(M) Equipment heaters. All equipment heaters, including anti-condensation heaters on electrical equipment, sump heaters in reducers and hydraulic equipment, and crane cab air heater shall be tested to verify function during both the Initial inspection and first Periodic inspection. Function test thermal control for each heater as applicable. The Contractor shall prepare sketches showing the location on the new assembled crane for each heater inspection item and instruction method to verify function for each.

3.2.2 FREQUENT INSPECTIONS

The Contractor shall conduct Frequent inspections in the presence of the Contracting Officer. The first Frequent inspection shall take place the first working day after the Initial inspection has been completed. Frequent inspections shall be conducted as the first item of work on each day that the new assembled crane (existing superstructure and new undercarriage) is to be operated under power during this contract project work. The last Frequent inspection shall occur on the last day of acceptance testing. The Contractor shall remove and replace covers, deck plates, or safety guards to the extent required for inspection access, and these safety components shall be in place when the machinery is operated. The Contractor shall organize Frequent inspection items into comprehensive checklist/instruction format and include them in the crane operators logbook. Include blanks for initials/date to certify each inspection item on the checklists.

(A) Crane load indicator system. The Contractor's designated crane operator shall be responsible to verify proper operation of the crane load indicator system during Frequent inspections in accordance with the crane load indicator system manufacturer's instructions in the manufacturer's operation and maintenance manual. The Contractor's inspection procedure shall spell out in sequence each of the programmed display readouts and steps for the crane load indicator system startup/check sequence. The inspection checklist shall contain the correct list of the preprogrammed parameters for the setup' display, and blanks for certification that the set-up parameters are correct. The inspection shall include verification that lockouts occur for boom down and hoist raise functions when in the "test" mode. The checklist shall include blank spaces for initials/date for certification of each crane load indicator system test item.

(B) Anti-two block system. The first hoisting motion test item for Frequent inspection of the jib hoists, the bulkhead hoist, and the crane superstructure, shall be to manually trip the anti-two block weight system while the respective hoist is raising the unloaded hookblock. Verify that manual trip of the anti-two block weight system stops upward hoist motion and allows downward hoist motion. Then slowly hoist the hookblock up into the free-hanging weight of the anti-two block limitswitch in order to verify that the weight position is correct and again verify that required functions are locked out. In all cases be prepared to stop the hoist manually should the anti-two block system fail to trip. Document all crane load indicator system readouts and bulkhead hoist load indicator readouts observed during anti-two block system tests.

(C) Hydraulic systems on the new assembled crane (existing superstructure and new undercarriage). The Contractor shall inspect and document hydraulic fluid levels and replenish the fluid levels as required in the manufacturer's operation and maintenance manual during each Frequent inspection. The required crane superstructure hydraulic fluid will be Government furnished, at the contract project work site, as needed by the Contractor in order to complete the respective contract project work. The new undercarriage hydraulic system fluid (for brake control) is Petro Canada brand Harmony Arctic 15 hydraulic oil. All fluids replenishment shall use the same brand and type of hydraulic fluid as was originally furnished in the respective equipment. The checklist shall also itemize applicable special instructions for fluid level inspection such as full/low description, any required special tools, safety cover removal sequence, or equipment tagouts. The Contractor shall perform a visual inspection for leakage on the entire hydraulics system, including threaded end connections. Solvent clean all new undercarriage surfaces where leakage is visible including at hoses and fittings. The Contractor shall locate, document, reseal and reassemble any connections where hydraulic fluid leaks are apparent, as approved by the Contracting Officer.

(D) Crane superstructure and crane undercarriage gear reducer oil sump level. The Contractor is responsible to perform a daily check of each lubricant level in all enclosed gear reducers on the crane superstructure and the crane undercarriage including: the travel drive gearmotors (Part No. C1-1100-16); the bulkhead hoist gearmotors (Part No. B1-4100-2 and Part No. B1-4100-3); and the jib hoist reducers (Part No. J1-1000-3 and Part No. J1-1000-11). The Contractor shall measure, document, and replenish fluid levels as required in the manufacturer's operation and maintenance manual during each Frequent inspection. The checklist shall identify the name and type of lubricant for each reducer and shall specify the required lubricant level for each equipment item. Lubricant replenishment shall use the same brand and type lubricant as originally furnished in the respective equipment. The checklist shall also itemize applicable special instructions for lubricant level inspection access such as required tool lists, safety cover removal sequence, or equipment tagouts. The Contractor shall perform a visual inspection for leakage at seals, gaskets, and threaded connections. Solvent clean all of the new assembled crane (existing superstructure and new undercarriage) surfaces where leakage is visible. The Contractor shall locate, document, reseal, and reassemble all connections where lubricant leaks are visible as approved by the Contracting Officer.

(E) Cable reel. Remove covers and guards so that the power cable is visible and can be viewed when moving through the reeving. Verify that the cable pathway is free and clear of debris or obstructions. Inspect cable end connections and strain reliefs. Operate the new assembled crane (existing superstructure and new undercarriage) for the length of the dam service bridge railway and visually inspect the reel as the cable unspools and respools. Verify reeving on drum is uniform and that transition between cable layers on the drum is properly synchronized by the levelwind system. With the power cable unspooled from the drum (at ends of dam service bridge railway), stop the machinery and turn the power to the power cable off. Manually lift and wipe down the entire length of payed-out power cable and perform visual inspection of the cable sheath. Verify function of the cable reel changeover detection limitswitch (actuates as the reel passes over the

flip-over device). Verify that the slack cable limitswitch de-energizes travel functions except when passing over the flip-over device. Verify that the end-of-travel limitswitches prevent travel operations with cable reel empty drum condition.

(F) Reeving and rigging. Wire rope inspection applies to all wire rope systems on the new assembled crane (existing superstructure and new undercarriage). Remove covers and guards to the extent required visually inspect all rope and all reeving while operating the machinery through its entire range of motion with no load suspended from the hookblocks. Bulkhead hoists may be inspected with the pickup beam attached at its hookblocks. Inspect sheaves, grooves, and bearings as they move and document any rough motions. Document any rope problems including kinks or broken strands especially at pulleys or at drums at transitions between layers. Inspect wedge sockets and rope end connections for apparent movement. The Contractor shall stop and start the machinery during this trial run as directed by the Contracting Officer.

(G) Rail grabbers and guide rollers. Visually inspect the condition of the dam service bridge railway existing rail grabbers (Part No. Y1-2200-10) for any deformation. Manually rotate the guide rollers (part No. C1-1200-36) to check for any bearing roughness. Inspect these components as the new assembled crane (existing superstructure and new undercarriage) traverses the full length of the dam service bridge railway in both directions, especially at rail end gaps, for any unique or notable interface conditions between the rail head or rail clamps.

(H) Compile a list with locations for all revolution counters and hour meters (Reddington brand used on the new undercarriage) installed on the new assembled crane (existing superstructure and new undercarriage). Document the reading for each revolution counter including the: cable reel counter, bulkhead hoist counters (Part No. B1-1110-38), end truck wheel revolution counters (Part No. C1-1100-63), jib hoist revolution counters. Note that the crane superstructure has no identified revolution counters and the hour meter is not documented, but the Contractor shall locate and document readings on the hour meter. Identify all maintenance items required to be performed at counter reading intervals as defined by the operation and maintenance manual.

(I) Document weather conditions at the time of the inspection including: temperature, cloud cover, relative humidity, wind speed, and precipitation.

(J) Miscellaneous safety items. Compile a list of all required warning labels and required posted information on the new assembled crane (existing superstructure and new undercarriage). Verify that all required warning labels and posted information is in place. Verify that the required fire extinguishers are charged and properly posted. Verify that the travel alarm (refer to Section 16416 ELECTRICAL WORK) and crane superstructure horn are operable. Verify that all floodlights on the new assembled crane (existing superstructure and new undercarriage) are functional as required.

3.3 STARTUP TESTING

Starting-up of the installed equipment under power is to enable the

Contractor to make adjustments necessary to perform the testing work in accordance with paragraph: ACCEPTANCE TESTING. Startup testing also allows the Contractor to learn the control characteristics of the new assembled crane (existing superstructure and new undercarriage), including speeds, accelerations, braking, and plugging. The intent of startup testing is to make acceptance testing a formality with no surprises, as all necessary adjustments or changes shall have already been made and documented. The Contractor shall report any unforeseen problems uncovered during startup testing immediately, with subsequent corrective action to be determined by the Contracting Officer.

3.3.1 Startup Testing Procedures

The Contractor shall formulate startup procedures the following parts of the new assembled crane (existing superstructure and new undercarriage): existing superstructure, jib hoists, bulkhead hoist, and new undercarriage travel drive. The first item of startup testing shall be an inspection of the static assembly to verify the work performed in Section 15000 MACHINERY INSTALLATION is complete. Each new system on the new assembled crane (existing superstructure and new undercarriage) is to have been adjusted and tested separately by their respective manufacturers prior to shipment. After completion of assembly and installation of the crane superstructure new components and the crane new undercarriage components by the Contractor, additional adjustments by Contractor may be required in order to obtain proper operation. The startup procedures shall consist of systematic series of items to inspect, test, and adjust for all of the new assembled crane (existing superstructure and new undercarriage) systems before lifting loads or travel along the dam service bridge railway. The startup procedures shall identify all user-adjustable setpoints for each new assembled crane (existing superstructure and new undercarriage) control function. The Contractor shall document and report all adjustments actually made during the startup procedures, and all adjustments shall be made in accordance with the manufacturer's instructions. The Contractor shall document all adjustments made to include date, identification of where and how adjustment was made, and extent of change (such as number of turns clockwise or counter-clockwise, torque, length change, etc.). The intent of this requirement is to retain control of changes to the as-furnished set points. This information shall be submitted as part of the startup testing reports. Startup testing shall cover the inspection of the limitswitch initial settings, control station function (pendant, local, remote), and supporting systems (horns, lighting, heaters, fans, etc.). Startup procedures shall operate each system first incrementally with no/low load and at slow speed, and then proceed to greater levels of control input, up to and including plugging the motors and operating through the entire range of motion. The manufacturer's operation and maintenance manuals present the information relevant to these set points and locations. Startup testing procedures shall be prepared by the Contractor to verify proper function of at least the following systems:

(A) Bulkhead hoist arms:

Wire rope reeving.
Drum levelwinding including layer transitions.
Anti-two block system.
Hoist trolley motion (racking upstream/downstream directions).
Synchronization of left and right bulkhead hoists.
Fit of pickup beam and bulkhead to stabilizer frame.
Hoist brakes.
Loadcells and load indication.

Limitswitch setpoints and operation.
Pawl (positive load holding device on wire rope drum) actuation.
Alternate control station (pendant station).

(B) Travel drive:

Travel brake operation.
Tracking on rails, including fit of rail grabbers and guide rollers to rails.
Alternate control stations (crane operator's cab and pendant stations).

(C) Cable reel:

Drum levelwinding through entire range of motion.
Cable condition - entire length including end terminations.
Cable pathway including flip-over device.
End of travel limitswitches.
Changeover limitswitches.
Slack cable limitswitches.
Slip ring and heater.
Cable end attachments.

(D) Jib hoists:

Anti-two block system.
Wire rope and reeving.
Pawl (positive load holding) actuation.
Alternate control stations (pendant stations).

(E) Dam service bridge crane rail stops:

Alignment with crane rail stops on dam service bridge.

(F) Crane superstructure rotation (slew):

Rotation both directions.
Slip ring.
Rotation limitswitch for bulkhead hoist interlock.

(G) Crane superstructure anti-two block system:

Standard verifications per manufacturer's instructions.

(H) Crane superstructure load indicator system:

Standard verifications per manufacturer's instructions.

(I) Crane boom raise and lower:

Document control location for boom raise and lower speeds.
Check motion limiters (boom stops) engage at ends of boom travel.

(J) Jib hoist:

Document user-adjustable setpoints for hoist raise/lower speed.
Inspect proper reeving on drum including between layers.
Pawl (positive load holding) actuation.

Band hoist brake actuation.
Inspect free fall interlock function.
Free fall trial operation (no-load, hookblock only).

(K) Lighting:

Undercarriage floodlights.

3.4 ACCEPTANCE TESTING

The Contractor shall commence the acceptance testing sequence after the results of Initial inspection and startup testing have been approved and after each Frequent inspection. Acceptance testing is to demonstrate proper assembly and operability of the new assembled crane (existing superstructure and new undercarriage) systems through tests that simulate all normal use tasks, including demonstration of safety interlocks and limiters where installed. Acceptance testing shall also document actual measured performance parameters for future reference. Acceptance testing basically requires the Contractor to operate the new assembled crane (existing superstructure and new undercarriage) through its extent of motion a minimum number of times with required loads and to document required parameters during each test run. Final control of tests shall be by the Contracting Officer. The Contracting Officer may direct to stop and restart or reverse directions at any time during a test run. The Contracting Officer may reject an ongoing test run and require that the run and measurements be redone. For any test run, the Contracting Officer may elect to changeover control for any given function to any of the respective operator stations (i.e., pendant stations, control stands, crane operator's cab) at any time during a test. For tests where not all machine orientations (i.e., boom angle, crane rotational orientation, etc.) are required, the Contracting Officer will select the relevant orientations for conducting the tests.

3.4.1 Crane Superstructure Tests

Crane boom loads must be limited to 50 percent of the crane's rated capacity when the new assembled crane (existing superstructure and new undercarriage) undercarriage wheels travel or sit on the end of a dam tainter gate service bridge span. All crane boom load testing must take place with the new assembled crane (existing superstructure and new undercarriage) positioned within the central one-half of an existing storage yard service bridge span.

(A) Crane superstructure rotation (slew) no-load test

As the first item of work in this test, the Contractor shall conduct a walk-through inspection. With no load attached to the hookblock, raise the crane boom and hookblock as directed by the Contracting Officer and verify that the hookblock has a clear path for 360 degree rotation.

(1) Clockwise rotation. Unless directed otherwise, rotate clockwise at top speed for 10 revolutions. Document seconds per revolution.

(2) Counterclockwise rotation. Unless directed otherwise, rotate counterclockwise at top speed for 10 revolutions. Document seconds per revolution.

(B) Crane rotation load test. Lower the crane boom to the horizontal position. Attach maximum radius rated load to the crane hookblock.

Raise the load and crane boom as directed by the Contracting Officer to allow a clear path for 360 degree crane superstructure rotation as approved. Rotate the loaded crane superstructure in both directions for a total of 10 complete rotations; stopping, starting, and changing directions as required by the Contracting Officer.

(C) Crane boom luffing (raise/lower) test. This test shall be conducted with rated load for crane superstructure maximum radius suspended from the hookblock. With the load suspended, cycle the boom through its full range of motion from crane boom full down to crane boom full up position and back down for a total of 10 times. Document time from crane boom full down to crane boom full up position, and from crane boom full up to crane boom full down position. Rotate the crane superstructure in order to position the crane boom axis parallel to the dam service bridge railway rails, and raise the crane boom (with load still suspended from hookblock) to approximately 10 degrees up from crane boom horizontal position (or as approved) to facilitate measurements. Measure the vertical distance from dam service bridge existing deck plates to control points on the crane boom outer tip and the suspended load to the nearest 0.50 inch. Turn off the new assembled crane's (existing superstructure and new undercarriage) power for a period of 60 minutes (minimum); at the end of this period document droop (if any) of the crane boom and suspended load to the nearest 0.50 inch. Note that any droop will be due to the crane boom as the hoist pawl mechanism engages in power up/down mode to positively prevent hoist drum revolution.

(D) Crane superstructure main hoist test (power up and power down). The Contractor shall remove crane superstructure machinery covers to the extent that all moving parts (including drum pawl actuation, and brake operation are visible to the test witnesses. For the first item of work in this test, the Contractor shall conduct a walk through inspection of the crane main hoist motion, including the freefall mode switch. This test is conducted with rated load for crane maximum radius suspended from the crane hookblock. Crane boom angle shall be as approved to allow hoisting the load vertically from the existing top of lockwall elevation to full up position and back down for a total of 10 times. Measure and document high speed and low speed hoist raise and hoist lowering rates.

(E)Crane freefall test. The Contractor shall keep crane machinery covers removed so that moving parts of the crane hoist are visible to the test witnesses. Remove loads attached to the crane hookblock. Switch the crane to freefall mode operation. Hoist the hookblock to full up position, freefall the hookblock for 20 to 30 feet, and then hoist the hookblock again to full up position. Repeat the hoist/freefall cycle for a total of ten times. The Contractor shall pause for the Contracting Officer, as directed. After the freefall cycles are completed, position the crane boom parallel to the dam service bridge railway rails and leave the crane in freefall mode. Attach maximum crane boom radius rated load to the crane hookblock. Raise the crane boom with load attached to approximately 10 degrees up from horizontal. Raise the load to suspend it approximately five to six feet above the top of the dam service bridge railway rail elevation. Measure distance (height) from the dam service bridge existing deck plates to the control points on the crane boom's outer tip and load to nearest 0.50 inch. Turn the power off to the new assembled crane (existing superstructure and new undercarriage) for a period of 60 minutes; at the end of this period measure droop (if any)

of the crane boom and load to nearest 0.50 inch.

3.4.2 Bulkhead Hoist Test

The bulkhead hoist shall be tested by no-load cycling and design load cycling. Testing cycles shall include the complete range of motion for hoisting (up/down direction) and trolley (upstream/downstream directions). Remove floor plates and drum covers in order to provide a clear view of the wire rope pathway, reeving, and trolley extent of motion to observe for proper bulkhead hoist machinery operation, including wire rope reeving and proper pawl system actuation during all bulkhead hoist testing. Bulkhead hoist control is either from the normal pendant station or the jib hoist pendant station. The Contractor shall switch back and forth between bulkhead hoist control stations at any time during the tests, as directed by the Contracting Officer. All control functions shall be verified from each control station.

3.4.2.1 Bulkhead hoist no-load tests

Bulkhead hoist no-load tests shall be conducted without bulkhead pickup beam or other loads suspended from bulkhead hoist hookblocks. Document that bulkhead hoisting is not possible unless the crane superstructure is oriented with the crane boom facing upstream. Rack the bulkhead trolleys in the upstream and downstream direction through the complete range of motion a total of 10 times. Measure and document the trolley range of motion to the nearest 0.5 inch for each hoist arm, to be recorded as the distances between centerline of the hookblock eyes and the centerline of the dam service bridge railway rails. Observe and document that the trolley motion limiter mechanism (limitswitches) engages properly in both directions. Measure and document racking speed in both upstream and downstream directions (inches per second). Test "LEFT TROLLEY ONLY / RIGHT TROLLEY ONLY" selector switch. Test control from alternative control station. Position the new assembled crane (existing superstructure and new undercarriage) so the bulkhead hoist is over the storage yard at the contract project work site. Lower and raise the bulkhead hoist hookblocks from full up position down to the elevation of the top of the existing lockwall a total of 10 times continuously stopping, starting, and changing speeds (high/low) as directed by the Contracting Officer. At the end of the 10 hoisting cycles, mark speed measurement intervals on the wire rope as required. Measure hookblock speed in both directions (up and down) and both speeds (high and low). Observe and document the readouts of the bulkhead hoist digital load indicator for tare weight and for peak load for both hookblocks.

3.4.2.2 Bulkhead load test

This test shall include picking up five Government bulkheads from the storage yard at the contract project work site and placing them nearby in the existing bulkhead slots of a tainter gate bay (to be determined by the Contracting Officer) and then after completion of this placement of the bulkheads, removing them and returning them to the storage yard; all of the above placement and removal operations shall be performed with the bulkhead hoist. All bulkheads shall be lifted one at a time (stacking two bulkheads together for one lift will not be allowed). This test is to simulate the bulkhead hoist duty cycle for installing bulkheads in one tainter gate bay, followed by the duty cycle for removing the bulkheads from one tainter gate bay. The tainter gate bay to have bulkheads installed and removed will be determined by the Contracting Officer prior to the start of the test. The order of bulkhead placement will also be chosen by the Contracting Officer prior to the start of the test. This test shall begin with the Government's

bulkhead pickup beam decoupled from the bulkhead hoist hookblocks and resting on one of the Government bulkheads in the storage yard at the Contract project work site.

(A) Position the bulkhead hoist hookblocks vertically above the bulkhead pickup beam. Lower the bulkhead hoist hookblocks to the bulkhead pickup beam and attach the pickup beam to the bulkhead hoist hookblocks. Reeve the bulkhead pickup beam actuator wire ropes to the retracting cable reels.

(B) Latch the bulkhead pickup beam to the bulkhead using the pickup beam actuator wire ropes from above at the bulkhead hoist operator stand. Hoist the pickup beam and the bulkhead to full up position, and observe the fit of the pickup beam and bulkhead to the stabilizer frame. The Contractor is responsible to adjust the anti-two block limitswitches to obtain engagement of the bulkhead into the stabilizer frame. At full up position, measure and document the top plane of the pickup beam is level (in the direction between the bulkhead hoist hookblocks) to within $\pm$ 0.25 inches over 26 feet centerline to centerline of the hookblocks. If the pickup beam is not measured to be level to within this tolerance, the Contractor shall lower the bulkhead to unload the hookblocks, and then disassemble and reconnect synchronization shaft couplings to obtain the required level tolerance as approved.

(C) After the required levelness tolerance has been obtained, raise and lower the bulkhead from top of lockwall elevation up to full-up position two times, stopping, starting, and changing speeds (high/low) as directed by the Contracting Officer. At the end of the two cycles, again measure and document that the pickup beam is level to within required tolerance. If the pickup beam is not measured to be level to within required tolerance, the Contractor shall again disassemble and reconnect synchronization shaft couplings in a manner to obtain the required level tolerance as approved.

(D) After the bulkhead levelness criteria has been obtained, mark speed measurement intervals on the measure hookblock speed for bulkhead hoisting in both directions (up and down) and both speeds (high and low). Observe and document readouts from digital load indicator for both hookblocks for the static weight of the bulkhead and bulkhead pickup beam. Raise the bulkhead to a position just below the stabilizer frame. Rack the bulkhead trolleys in the upstream and downstream directions through the complete range of motion a total of 10 times continuously; but stopping, starting, and changing directions as directed by the Contracting Officer.

(E) Transport the five each bulkheads to the bulkhead slots in the selected tainter gate bay. After installation, remove the bulkheads and reposition them in the storage yard. The last bulkhead shall be held in a suspended position just above the storage yard to determine if slippage occurs. Measure the vertical distance between control points on the storage yard and bulkhead to the nearest 0.10 inch. Turn off hoist power for one hour and document droop (if any) of the suspended load to the nearest 0.10 inch. Lower the bulkhead, unlatch it, and hoist the bulkhead pickup beam up to engage the stabilizer frame.

3.4.3 Undercarriage Travel Tests

(A) Travel drive tests - unloaded. These tests are to be conducted with no bulkhead attached and no bulkhead pickup beam attached. Remove cover from the cable reel assembly to allow clear view of moving parts including reel, levelwinder, and slip ring assemblies. Remove the undercarriage floor plates so that the travel brake hydraulic system is visible to the witnesses. Traverse the entire existing dam service bridge railway length from crane rail stop to crane rail stop in both directions a total of ten times, controlling the new assembled crane (existing superstructure and new undercarriage) travel from the travel drive controller mounted in crane operator cab and the travel drive control stand on the crane undercarriage, as directed by the Contracting Officer. Stop, start, and vary speeds and directions as directed by the Contracting Officer. Verify that travel brakes engage and disengage simultaneously. Verify that the cable reel winds and unwinds as designed. Document that the new assembled crane (existing superstructure and new undercarriage) can travel out to the crane rail stops at either end of the dam service bridge railway. With the new assembled crane (existing superstructure and new undercarriage) at one end of the dam service bridge railway, stop the new assembled crane (existing superstructure and new undercarriage), disconnect power, and lift and examine the length of payed-out power cable for external damage. Document steady state high speed and slow speed. Document time and distance to accelerate and decelerate to and from top speed. Document time and distance to accelerate and decelerate to and from slow speed. Document time to accelerate from zero speed to 10 feet, 20 feet, and 30 feet. These measurements shall be simply made with stopwatch and temporary chalk line marks on the dam service bridge deck.

(B) Travel drive tests - loaded. Attach the Government's bulkhead pickup beam and one Government bulkhead to the bulkhead hoist. Raise the bulkhead to full up position so it engages into the stabilizer frame. Traverse the entire dam service bridge railway length in both directions a total of ten times, controlling the new assembled crane (existing superstructure and new undercarriage) travel from the travel drive controller mounted in crane operator cab, and the travel drive control stand on the crane undercarriage, as directed by the Contracting Officer. Stop, start, and vary speeds and directions as directed by the Contracting Officer. Document the extent that the bulkhead swings in the direction along its length when lifted into the stabilizer frame under maximum travel acceleration and deceleration forces.

(C) Crane bumper test. Travel the new assembled (existing superstructure and new undercarriage) crane out to near one end of the dam service bridge railway. Drive the new assembled crane (existing superstructure and new undercarriage) at slow speed until the crane bumpers just contact the crane rail stops. Visually inspect and document clearance between the crane bumper and crane rail stops. Repeat the same procedure for the other crane rail stops at the other end of the dam service bridge railway.

3.5 ACCEPTANCE

Upon successful completion of acceptance testing, the Contractor will be furnished written notice of Government acceptance of the items tested. Operation of the accepted items thereafter will be by the Government.

-- End of Section --

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DIVISION 16 - ELECTRICAL

SECTION 16416

ELECTRICAL WORK

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SECTION 16416

ELECTRICAL WORK

PART 1 GENERAL

1.1 SCOPE

This section covers:

(A) Electric raceway, conductors, wiring devices and associated required equipment, complete with supporting devices and other appurtenances as required.

(B) The handling, installation, wiring, setup, startup testing and making fully operational the electrical power and control features of required existing and new equipment.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C2	(1997) National Electrical Safety Code
ANSI C80.1	(1994) Rigid Steel Conduit - Zinc Coated

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 123	(1997E) Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153	(1998) Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM B 8	(1999) Conductors, Copper, Concentric-Lay-Stranded, Hard, Medium-Hard, or Soft
ASTM B 117	(1997) Salt Spray (Fog) Apparatus
ASTM B 174	(1995) Bunch-Stranded Copper Conductors For Electrical Conductors
ASTM D 709	(1992) Laminated Thermosetting Materials
ASTM D 1654	(1992) Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 383	(1992) Type Test of Class 1E Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA FB 1	(1993) Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies
NEMA ICS 1	(1993) Industrial Control and Systems: General Requirements
NEMA ICS 2	(1993) Industrial Control and Systems: Controllers, Contractors, & Overload Relays Rated Not More Than 2,000 Volts AC or 750 Volts DC
NEMA ICS 4	(1993) Industrial Control and Systems, Terminal Blocks
NEMA KS 1	(1996) Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum)
NEMA MG 1	(1998) Motors and Generator
NEMA OS 1	(1996) Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports
NEMA RN 1	(1998) Polyvinyl-Chloride (PVC) Externally Coated Rigid Steel Conduit and Intermediate Metal Conduit
NEMA WC 8	(1988) Ethylene-Propylene-Rubber-Insulated Wire Cable for the Transmission and Distribution of Electric Energy

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1999) National Electrical Code (NEC)
NFPA 101	(1999) Life Safety Code

UNDERWRITERS LABORATORIES, INC. (UL)

UL 1	(1993) Flexible Metal Conduit
UL 5	(1995) Surface Metal Raceway and Fittings
UL 6	(1993) Rigid Metal Conduit
UL 20	(1995) General-Use Snap Switches
UL 44	(1999) Thermoset-Insulated Wires and Cables
UL 50	(1997) Enclosures for Electrical Equipment
UL 83	(1998) Thermoplastic-Insulated Wires and

	Cables
UL 198B	(1995) Class H Fuses
UL 198E	(1988) Class R Fuses
UL 360	(1996) Liquid-Tight Flexible Steel Conduit
UL 467	(1996) Grounding and Bonding Equipment
UL 486A	(1998) Wire Connectors and Soldering Lugs for Use with Copper Conductors
UL 486C	(1998) Splicing Wire Connectors
UL 489	(1998) Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
UL 510	(1994) Polyvinyl Chloride, Polyethelene, and Rubber Insulating Tape
UL 512	(1995) Fuseholders
UL 514A	(1998) Metallic Outlet Boxes
UL 514B	(1998) Fittings for Conduit and Outlet Boxes
UL 817	(1998) Cord Sets and Power-Supply Cords
UL 870	(1998) Wireways, Auxiliary Gutters, and Associated Fittings
UL 943	(1998) Ground-Fault Circuit-Interrupters
UL 1004	(1997) Electric Motors

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

List of Equipment and Materials; GA.

A complete itemized listing of equipment and materials proposed for incorporation into the contract project work shall be submitted. Each such itemization shall include an item number, the quantity of items proposed, and the name of the manufacturer of each item.

Manufacturer's Catalogs; FIO.

Data composed of catalog cuts, brochures, circulars, specifications, product data, and printed information in sufficient detail and scope to verify compliance with the requirements of the contract documents.

SD-04 Drawings

Shop Drawings; GA.

Shop drawings shall be submitted for approval and shall consist of a complete list of equipment and materials, including manufacturer's descriptive and technical data; catalog cuts; and any special installation instructions that may be required. Shop drawing shall be submitted for all materials and equipment required. Shop drawings shall show applicable schematic diagrams; equipment layout and anchorage; and conduit runs, anchorage, and support.

Contractor's Drawings; GA.

The Contractor shall submit drawings as required to supplement contract drawings, manufacturer's data and drawings, and Contractor's data in order to demonstrate compliance with applicable contract requirements. Drawings shall be dimensioned or scaled to show the relative arrangement and mounting details of the equipment or equipment assemblies.

SD-09 Reports

Manufacturer's Certified Factory Test Reports; FIO.

Certified factory test reports shall be submitted when manufacturers perform routine factory tests normally performed by the manufacturer, including tests required by standards listed in paragraph: REFERENCES.

Contractor's Certified Field Test Reports; FIO.

Field tests shall be made and test reports shall be written and certified by the Contractor to the Contracting Officer. Field tests shall include those required in Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING. The Contractor shall submit these items as a supplement the manufacturer's data and drawings and the Contractor's drawings.

SD-13 Certificates

Underwriters Laboratories Inc. (UL) Publications; FIO.

The label or listing of Underwriters Laboratories, Inc., will be accepted as evidence that the materials and/or equipment conform to the applicable standards of that agency. In lieu of this label or listing, the Contractor shall submit a statement from a nationally recognized, adequately equipped testing agency indicating that the items have been tested in accordance with required procedures and that the materials and equipment comply with all contract requirements.

Non-Underwriters Laboratories Inc. (UL) Publications; FIO.

For other than equipment and materials specified to conform to Underwriters Laboratories Inc. publications, a manufacturer's statement indicating complete compliance with the applicable standard of ASTM, NEMA, or other commercial standard, is acceptable.

Manufacturer's Certificates of Compliance; FIO.

Certificates shall be prepared by the manufacturers when the manufacturer's

published data or drawings do not indicate conformance with other requirements of the contract documents.

Contractor's Certifications; FIO.

Certifications shall be submitted when required; and certified factory and field test reports and certificates of compliance may be submitted in lieu of other proofs of compliance with these contract provisions. The Contractor shall submit these items as a supplement the manufacturer's data and drawings and the Contractor's drawings.

SD-14 Samples

Samples and Schedules; FIO.

Samples and schedules shall be submitted as required in the contract documents.

PART 2 PRODUCTS

2.1 GENERAL

Items of the same classification shall be identical including equipment, assemblies, parts, and components.

2.1.1 Prevention of Corrosion

(A) Metallic materials shall be protected against corrosion as required. Aluminum shall not be used in contact with earth or concrete.

(B) Ferrous metal hardware shall be hot-dip galvanized in accordance with ASTM A 123 and ASTM A 153.

2.1.2 Standard Products

Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall be essentially duplicate items that have been in satisfactory use for at least five years prior to the contract award date.

2.1.3 Identification Nameplates

Major items of electrical equipment and major components shall be permanently marked with an identification nameplate to identify the equipment by type or function and specific unit number as indicated. Nameplate designation shall be in accordance with the names shown on the drawings.

2.2 MATERIALS AND EQUIPMENT

2.2.1 Workmanship

Materials and equipment shall be installed in accordance with recommendations of the manufacturer and as required.

2.2.2 Publications

Materials and equipment shall conform to the respective publications and

other requirements required herein. Materials and equipment not listed below shall be as required elsewhere in this section.

2.2.3 Wire and Cables

All wire and cable shall have annealed copper conductors. All conductors shall be Class B stranded in accordance with ASTM B 8 unless noted otherwise. Aluminum conductors will not be allowed. Cables shall be single conductors, unless noted otherwise.

(A) Low-voltage cables. Low-voltage cables shall be as required and utilize either: ethylene-propylene-rubber (EPR) insulation conforming to NEMA WC 8; cross-linked-polyethylene (XLPE); or polyvinyl chloride (PVC) insulation conforming to UL 83.

(B) Grounding cables. Grounding cables shall be bare, except where installed in conduit with associated phase conductors. Insulated grounding cables shall be rated 600 volts and shall have green colored insulation of the same material as the associated phase conductors. Bare cables shall be ASTM B 8 soft-drawn unless otherwise indicated; aluminum is not acceptable.

(C) Cord sets and power-supply cords: UL 817.

2.2.4 Connectors for Low-voltage Cables

(A) UL 486A for copper conductors.

2.2.5 Molded-case Circuit Breakers

(A) UL 489

2.2.6 Conduit and Fittings

(A) Liquidtight flexible steel conduit: General-purpose type, UL 1; liquid tight, UL 360.

(B) Rigid steel conduit: ANSI C80.1 and UL 6, hot dipped galvanized.

(C) Conduit outlets and fittings, steel: NEMA FB 1 and UL 514B.

(D) Multioutlet assembly: UL 5.

(E) Conduit coatings:

(1) Plastic resin system: NEMA RN 1, Type A-40.

(2) Epoxy system: NEMA RN 1, Type A-40.

2.2.7 Connectors, Wire Pressure

(A) UL 486A and UL 486C.

2.2.8 Duct and Conduit Caulking Compound

Compounds for sealing ducts and conduit shall have a putty-like consistency workable with the hands at temperatures as low as 35 oF, shall not slump at a temperature of 300 oF, and shall not harden materially when exposed to the air. Compounds shall readily chalk or adhere to clean surfaces of

asbestos-cement, fiber, or plastic ducts; metallic conduits or conduit coatings; concrete, masonry, or lead; any cable sheaths, jackets, covers, or insulation materials; and the common metals. Compounds shall form a seal without dissolving, noticeably changing characteristics, or removing any of the ingredients. Compounds shall have no injurious effect upon the hands of workers or upon materials.

2.2.9 Fittings, Cable and Conduit

(A) UL 514A

2.2.10 Fuses

(A) Cartridge fuses: Nonrenewable, dual element, time lag type, UL 198B, Class H.

(B) Current limiting fuses: UL 198E, Class R.

2.2.11 Motor-Driven Equipment

2.2.11.1 General

Electric motor-driven equipment shall be provided complete with motors, motor starters, and controls. Electrical equipment and wiring shall be as required herein. Electrical characteristics shall be as indicated. Motor starters shall be provided complete with properly sized thermal-overload protection and other appurtenances necessary for the motor control indicated. Each motor shall be of sufficient power to drive the equipment at the required capacity without exceeding the nameplate rating of the motor. Manual or automatic control and protective or signal devices required for the operation specified and any control wiring required for controls and devices shall be provided.

2.2.11.2 Motor, AC, Fractional and Integral Horsepower (500 Horsepower and Smaller)

NEMA MG 1 and UL 1004.

2.2.12 Outlet Boxes

(A) Cast-metal: UL 514A.

(B) Sheet-steel: NEMA OS 1.

2.2.13 Ground Fault Interrupters

UL 943, Class A or B.

2.2.14 Splice, Conductor

IEEE 383 or UL 486C.

2.2.15 Switches

(A) Disconnect switches: NEMA KS 1.

(B) Snap switches: UL 20.

2.2.16 Tapes

(A) Plastic tape: UL 510.

(B) Rubber tape: UL 510.

(C) Fuseholders: UL 512.

2.2.17 Terminal Blocks

Terminal blocks, NEMA ICS 4, for control wiring shall be molded or fabricated type with barrier, rated not less than 600 volts. The terminals shall be a flat terminal connector screw type, which will accept ring or spade lugs. Wires to terminals shall be installed with spade lug terminals. A marking strip on the terminal blocks shall identify terminal points. Provide at least 25 percent spare terminals in all junction boxes and panels requiring installation of terminal blocks.

(A) Each device to which a connection is made shall be assigned a device designation, as shown on the drawings, or if not shown in accordance with Part ICS 1-101 of NEMA ICS 1; and each device terminal to which a connection is made shall be marked with a distinct terminal marking corresponding to the wire designation used on the schematic and connection diagrams. Special attention shall be given to wiring and terminal arrangement on the terminal blocks to permit the individual conductors of each external cable to be terminated on the adjacent terminal points. The wire (terminal point) designations used on the wiring diagrams and printed on terminal block marking strips may be according to the supplier's standard practice; however, additional wire and cable designations for identification of remote (external) circuits may be required. Power wires leaving control panels shall be color-coded.

2.2.18 Wireway

Wireways shall be in accordance with UL 870.

2.2.19 Grounding and Bonding Equipment

Grounding and bonding equipment shall be in accordance with UL 467. Wire shall be ASTM B 8 soft-drawn copper. Connections above grade shall be exothermically welded or connectors in accordance with UL 467 and any other special requirement (such as UL approved for use with "Master Label" lightning protection systems, communications, etc.).

2.2.20 Control Relays

Control relays shall be of the electrically-operated, magnetically-held, self-reset, machine tool type, suitable for mounting inside the control compartments, and shall be 120-volt AC coils unless indicated otherwise. Contacts shall be as indicated on the drawings and shall have a contact rating designation of A600 or N600, as required, in accordance with NEMA ICS 2.

2.3 OTHER PRODUCTS

2.3.1 Identification Nameplates

2.3.1.1 For interior use

Unless required otherwise, all identification nameplates used indoors and within indoor and outdoor enclosures shall be made of laminated plastic in accordance with ASTM D 709 with black outer layers and a white core. Edges shall be chamfered. Plates shall be fastened with black-finished round-head drive screws or approved nonadhesive metal fasteners. When the nameplate is to be installed on an irregular shaped object, the Contractor shall devise an approved support suitable for the application. In all instances, the nameplate shall be installed in a conspicuous location. At the option of the Contractor, the equipment manufacturer's standard embossed nameplate material with black paint-filled letters may be furnished in lieu of laminated plastic. The following equipment, at a minimum, shall be provided with identification nameplates:

Minimum 1/4-inch high letters: Automatic transfer switches, safety switches, equipment enclosures.

Minimum 1/8-inch high letters: Control devices (relays, contactors, etc.).

2.3.1.2 For outdoor use

Nameplates shall be made of brass approximately 1/32 inch thick, stamped to provide indented letters not less than 1/4 inch high. Indented letters shall be physically darkened, in accordance with the manufacturer's standard method, in order to permit ease of reading.

(A) Equipment of the plug/connector withdrawal type shall be provided with nameplates mounted on the removable equipment in locations visible when the equipment is in place. Nameplates attached to cable grips of plugs shall be round and secured with two stainless steel "S" hooks.

(B) The nameplates shall be fastened to the panels and enclosures in proper positions with brass round-head screws. Samples of engraved nameplates with a schedule of nameplate sizes and lettering shall be submitted to the Contracting Officer for approval.

2.3.2 Conduits and Fittings

(A) All conduit shall be hot-dipped galvanized rigid steel or liquid-tight flexible steel conduit. All conduit, unless indicated otherwise, shall be 3/4 inch minimum size.

(B) Conduits shall be continuous from enclosure to enclosure with heavy-duty, watertight, threaded hub connectors.

(C) All exposed and exterior outlet boxes and conduit bodies shall be the cast ferrous metal type, threaded for rigid heavy wall conduit and provided with gasketed covers.

2.3.3 Wire and Cable

Unless required other, conductor size and number of conductors for a particular application and/or service shall be as indicated on the drawings.

2.3.3.1 Single conductor cables

Single conductor low voltage wire and cables shall be NEC types RHH, RHW-2 conforming to UL 44, USE-2, SIS, or XHHW-2, unless otherwise indicated on the drawings.

2.3.3.2 Flexible power and control cables

Flexible cables shall be extra flexible and extra thick, with EPR insulation and a reinforced rubber jacket. Cables shall be highly resistant to impact and abrasion, flame resistant, sunlight resistant, weather resistant, resistant to oils, acids and alkalies; shall be color-coded for permanent conductor identification; and shall be able to withstand constant reeling and flexing. Control cables shall have uncoated copper conductors, stranded in accordance with ASTM B 174, Class K or Class M. Power cables shall have coated copper conductors and shall be flexible rope stranded.

2.3.3.3 Power conductor identification, 10 AWG and smaller

Conductors 10 AWG and smaller shall be color-coded using colored insulation; plastic phase tape or markers shall not be allowed. Grounded neutral conductors shall be white or gray in accordance with NFPA 70. Wires shall be identified at terminals and junction boxes by the circuit number or cable number as shown on the drawings. Conductors in multiphase systems serving single-phase loads shall be color-coded. Color coding for ungrounded conductors of different voltage systems shall be as follows:

120/208 volt, 3-phase:	red, black, and blue
277/480 volt, 3-phase:	brown, orange, and yellow
120/240 volt, 1-phase:	red and black

2.3.3.4 Power cable identification, 8 AWG and larger

Conductors 8 AWG and larger, identification shall be made by color-coded insulation, or conductors with black insulation may be furnished and identified by the use of half-lapped bands of colored electrical tape wrapped around the insulation for a minimum of 3 inches of length near the end, or other method as submitted by the Contractor and approved by the Contracting Officer. Wires shall be identified at terminals and junction boxes by the circuit number or cable number as shown on the drawings. Identification shall also be applied to each conductor in all boxes where splices or taps are made.

2.3.3.5 Cable and control conductor identification

Control and power cables shall be identified at all junction and termination cabinets, and at 50 foot intervals in cable trays and wireways. Where cables pass through walls or conduits, one tag for each cable shall be installed on each side of the barrier. Tags shall be 3/4 inches in diameter and fabricated from 1/32 inch thick brass plate. Lettering shall be 1/4 inch minimum height Gothic style with the letter width as required. Tags shall have a 1/8 inch hole located above the top of the lettering for fastening. Letters shall be machine stamped and filled with black enamel. Cable identification shall correspond to the labels found on the drawings. Tags shall be attached to the cable with stainless steel wire not smaller than 14 AWG so that movement of the tag along the length of the cable is not possible.

2.3.3.6 Control and instrumentation conductor identification

Control and instrumentation conductor identification shall be made by color-coded insulated conductors and installation of heat stamped, black on yellow or white PVC or nylon sleeve markers, or equivalent means as

approved. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made. Control circuit terminals of equipment shall be properly identified. Terminal and conductor identification shall match that shown on drawings and approved shop drawings. Hand lettering or marking is not acceptable. Where insulation of the required color is not available, colored plastic tags of the required color attached within the indicated enclosures.

2.3.3.7 Approval of insulated wire and cable

Data is required for approval by the Contracting Officer before manufacture or delivery. Wire and cable shall be constructed as required. Each variation and/or exception to the contract requirements must be approved in writing by the Contracting Officer prior to manufacture of the cable. Manufacture of the wire and cable shall not be started until all materials to be used in the fabrication of the finished wire or cable have been approved by the Contracting Officer. Failure to obtain such approval will be cause for rejection.

2.3.4 Boxes and Supports

Boxes shall be provided in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways, 4 inch by 4 inch nominal size and smaller, shall be of the cast-metal hub type when located in normally wet locations, when surface mounted on outside of exterior surfaces, when located in hazardous areas, and when installed exposed up to 7 feet above interior floors and walkways. Large size boxes shall be NEMA Type 4 or as shown.

2.3.4.1 Weatherproof junction boxes

Junction boxes shall be a heavy-duty weatherproof, stainless steel enclosure and shall meet NEMA Type 4X and UL 50. The boxes shall have an overlapping cover with a flat neoprene gasket cemented to the cover. All associated hardware shall be stainless steel including bolts, clips, nuts, washers, and springs. The boxes shall be surface mounted as shown on the drawings. Drain-Breather fittings shall be provided and installed on all outdoor NEMA Type 4X enclosures.

2.3.5 Fuses

A complete set of fuses for switches, panels, bus plugs, switchgear, and control centers shall be furnished as required. Time-current-tripping characteristics of fuses serving motors or connected in series with circuit breakers shall be coordinated for the proper operation. Fuses shall have a voltage rating not less than the circuit voltage.

2.3.5.1 Plug fuses

Plug fuses shall be of the nonrenewable time-delay type and shall be used for circuits rated 125 volts or less and 30 amperes or less.

2.3.5.2 Cartridge fuses, noncurrent-limiting type

Cartridge fuses of the noncurrent-limiting type shall be Class H, nonrenewable, dual element, time lag type and shall have interrupting capacity of 10,000 amperes. At 500 percent current, cartridge fuses shall not blow in less than 10 seconds. Cartridge fuses shall be used for

circuits rated in excess of 30 amperes, 125 volts, except where current-limiting fuses are indicated.

2.3.5.3 Cartridge fuses, current-limiting type

Cartridge fuses, current-limiting type, Class RK1 or RK5, shall have tested interrupting capacity not less than 100,000 amperes. Fuse-holders shall be of the rejection type.

2.3.6 Control Devices

2.3.6.1 Contacts

Contacts in miscellaneous control devices shall have current and voltage ratings in accordance with NEMA ICS 2 for rating designation B300.

2.3.6.2 Pushbutton control stations

Push buttons and indicating lights shall be heavy-duty type with colors and nameplates as indicated on the drawings. Outdoor enclosures shall be NEMA Type 4X stainless steel.

2.3.7 Equipment Connections

All equipment wiring not provided with the equipment shall be furnished and installed as required in the contract documents. Flexible conduits 6 feet or less in length shall be provided to all electrical equipment subject to periodic removal, vibration, or movement and for all motors. Liquid-tight conduits shall be used in damp or wet locations.

2.3.7.1 Motors and motor control

Motor control equipment, including automatic-control wiring and signaling devices, shall be connected in accordance with the contract documents unless required otherwise.

2.3.7.2 Installation of Government furnished equipment

Wiring shall be extended to the equipment, and proper connections made to the equipment. The Contractor shall provide all labor and material to wire all the assemblies of the equipment.

2.3.8 Repair of Existing Work

The contract project work shall be carefully laid out in advance, and where cutting, channeling, chasing, and/or drilling of concrete, steel, or other surfaces is necessary for the proper installation, support, and/or anchorage of the conduit, raceways, and/or other electrical work, this contract project work shall be carefully performed and all damage to existing/new structures and/or equipment shall be repaired by skilled mechanics of the trades involved at no additional cost to the Government.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 Code Compliance

The installation shall be in accordance with NFPA 70, ANSI C2, and NFPA 101.

3.1.2 Coordination

The drawings indicate the extent and the general location and arrangement of equipment, conduit, and wiring. The Contractor shall become familiar with all details of the contract project work and verify all dimensions in the field so that the equipment shall be properly located and readily accessible. Equipment and materials shall be located to avoid interference with mechanical or structural features. If any conflicts occur necessitating departures from the drawings, details of and reasons for departures shall be submitted and approved prior to implementing any change.

3.2 INSTALLATION

3.2.1 Grounding

Except where indicated otherwise, all exposed noncurrent carrying metallic parts of electrical equipment, metallic raceway systems, ground bus, and neutral conductor of the wiring system shall be grounded.

3.2.1.1 Equipment grounding

Equipment frames of metal-enclosed equipment other noncurrent-carrying metal items shall be grounded unless indicated otherwise.

3.2.2 Conduit Installation Methods

Unless otherwise indicated, wiring shall consist of insulated conductors installed in rigid steel conduit.

3.2.2.1 Conduit systems

Conduit systems shall be installed as indicated. Conduit sizes shown are based on conductor insulation types as described in paragraph: Wire and Cable. Raceways crossing structural expansion joints shall be provided with suitable expansion fittings or other suitable means to compensate expansion and contraction and to provide for continuity of grounding. Raceways shall be installed parallel or perpendicular to structural members, or intersections of vertical planes.

3.2.2.2 Changes in direction of runs

Changes in direction of runs shall be made with symmetrical bends or cast-metal fittings. Field-made bends and offsets shall be made with an approved conduit-bending machine. Crushed or deformed raceways shall not be installed. Trapped raceways in damp and wet locations shall be avoided where possible. Care shall be taken to prevent the lodgment of plaster, dirt, or trash in raceways, boxes, fittings and equipment during the course of construction. Clogged raceways shall be entirely freed of obstructions or shall be replaced.

3.2.2.3 Supports

Raceways shall be securely and rigidly fastened in place at intervals of not more than 10 feet with approved pipe straps, brackets, conduit clamps, conduit hangers, threaded C-clamps with retainers, or trapeze. Loads and supports shall be coordinated with supporting structure to prevent damage or deformation to the structures, but no load shall be applied to joist

bridging. Fastenings shall be by expansion bolts on concrete or brick; by machine screws, welded threaded studs, heat-treated or spring-steel-tension clamps on steel work. Nail-type nylon anchors or threaded studs driven in by a powder charge shall not be used. Raceways or pipe straps shall not be welded to steel structures. Holes cut to a depth of more than 1-1/2 inches in reinforced concrete beams or to a depth of more than 3/4 inch in concrete joists shall avoid cutting the main reinforcing bars. Holes not used shall be filled. Conduit shall not be supported using wire or nylon ties unless otherwise indicated. Raceways shall be installed as a complete system and be independently supported from the structure. Conduits shall be fastened to all sheet-metal boxes and cabinets with two locknuts where required by the NFPA 70, where insulating bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, a single locknut and bushing may be used. Bushings shall be installed on the ends of all conduits and shall be of the insulating type where required by the NFPA 70. Threaded hubs shall be used on sheet metal boxes where indicated.

3.2.3 Wire and Cable Installation

3.2.3.1 General

Wiring shall constitute the furnishing and installing of all cable and wire required in the locations as required; the making of all connections, and the proper placing, arranging, and identifying of all materials as required in the contract documents or as directed by the Contracting Officer. All wiring shall be as indicated on the drawings.

3.2.3.2 Splices

No splices or joints will be permitted in either feeders or branches except at outlets or accessible junction boxes. Joints in branch-circuit wiring shall be made mechanically and electrically secure with solderless connectors as listed by Underwriters Laboratories, Inc., as pressure cable type, 600 volt rating, compression or indent type or soldered. Connectors shall be insulated by approved type, integral or separate cover, or by means of taping with approved plastic or rubber and friction tapes to provide insulating value equal to that of the conductors being joined. Wire nut type connectors shall not be used. In the making of a splice, connectors shall be brought up securely upon the conductors in a workmanlike manner in such a way that all conductors are equally engaged, the insulation is not ruptured, no bare wires are exposed or have "backed off" due to application of pressure and the connector will not loosen due to cycling or vibration, in order to insure an efficient splice. Temperature rating of connectors shall be at least equal to that of the wire on which they are used. Terminations or splices for stranded conductors 6 AWG and larger shall utilize indent, hex screw, or bolt clamp type connectors with or without tongue, as approved by the Contracting Officer for the particular application. Connectors which are not factory furnished with equipment, for cable sizes 250 MCM and larger, shall have at least two bolt holes unless anti-turning means is provided. All wire and cable connectors shall be of high conductivity corrosion-resistant material, and have ampere capacity at least equal the current carrying capacity of the wire or cable.

3.2.4 Startup and Tests

3.2.4.1 Operating test

After the installation is completed, the Contractor shall perform startup and operating tests for approval. Startup and testing shall be done in accordance with Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING. The Contractor shall provide all labor and material required under this technical section and under Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING perform all startup testing and make fully operational the electrical power and control features of the Contractor provided systems and the Government furnished equipment that is Contractor installed. The Government will furnish the necessary electric power to operate the new assembled crane/undercarriage during the testing.

3.2.4.2 Testing of soft start motor controller

Before the undercarriage bulkhead hoist tests have been completed but after one set of the undercarriage travel tests are completed in accordance with Section 15010 MACHINERY STARTUP AND ACCEPTANCE TESTING, the Contractor shall temporary install the soft start motor controller and repeat the undercarriage travel tests. Unless directed otherwise, within four work days after the completion of the second set of undercarriage travel tests the Contracting Officer will give approval to permanently install the soft start motor controller if all shop drawings for the contract project installation work have be approved. After the permanently installation of the soft start motor controller the Contractor shall repeat the undercarriage travel tests.

3.2.5 Painting and Finishing

3.2.5.1 Factory coating

Outdoor equipment and component items not hot-dip galvanized or porcelain enamel finished, shall be provided with corrosion-resistant finishes which shall withstand 125 hours of exposure to the salt spray test specified in ASTM B 117 without loss of paint or release of adhesion of the paint primer coat to the metal surface in excess of 1/16 inch from the test mark. The scribed test mark and test evaluation shall be in accordance with ASTM D 1654 with a rating of not less than 7 in accordance with Table 1 (procedure A). Cut edges or otherwise damaged surfaces of hot-dip galvanized sheet steel, mill galvanized sheet steel, and/or rigid conduit with field cut threads shall be coated with a zinc-rich paint.

3.3 GUARANTEE

The equipment and materials furnished under this technical section shall be guaranteed against defective material, design, and workmanship for the period of one year from the date of acceptance. Upon receipt of notice from the Government of failure of any part of the guaranteed equipment during the guarantee period, new replacement parts shall be furnished and installed promptly by the Contractor at no additional cost to the Government.

3.4 QUALITY CONTROL

The Contractor shall establish and maintain a quality control program for work under this section to assure compliance with contract requirements, and he shall maintain records of its quality control for all construction operations including but not limited to the following:

(A) Inspection at the contract project worksite for damage and defects in material and equipment.

(B) Inspection at the contract project work site to ensure use of required material and equipment.

(C) Storage at the contract project work site.

(D) Installation, mounting, and alignment of all equipment.

(E) Operational tests of all installed facilities.

(F) Maintenance after installation.

Two copies of the records of inspections and tests, as well as the records of corrective actions taken, shall be furnished to the Government as directed by the Contracting Officer. The Quality Control Plan shall be in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

-- End of Section --